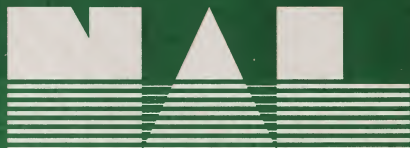


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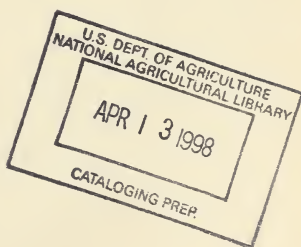


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September, 1928

CHAPTER XI

Futurity and Property

(Revision of chapter on Macleod)
 (This chapter transfers and revises pp. 13 to 33
 of Chapter I on Method)

1. Property and Things

Proudhon, Marx and Macleod, contemporaneously, were the first economists to attempt systematically to introduce property rights into economic theory. Yet they treated these rights as physical things analogous to the commodities of the Physiocrats and classical economists. Proudhon ended in Robbery and Anarchism, Marx in Exploitation and Communism, Macleod in Optimistic Capitalism. Macleod begins with credit, the very substance of Capitalism. "If it were asked", he said, "what discovery has most deeply affected the fortunes of the human race, it might probably be said with truth - The discovery that a Debt is a Saleable Commodity. When Daniel Webster said that Credit has done more a thousand times to enrich nations than all the mines of all the world, he meant the discovery that a debt is a saleable commodity or chattel: and that it may be used as money: and produce all the effects of money."¹

This saleable commodity is "Wealth"! Speaking of his

1 Macleod, Henry Dunning, Theory and Practice of Banking, 6th ed., 1:200 (1923). The first edition, 1856. Elements of Economics, 2 vols. (1867, 1886). Condensed statement in his Economics for Beginners, (1884, 6th impression 1900).

own Scotland, it was "the most utterly barbarous and lawless country in Europe". But its banking system has tended immensely to call forth every manly virtue. . . The express purpose of these banks was to create Credit, Incorporeal entities. . . Thus we have an enormous mass of Exchangeable Property created out of Nothing by the mere will of the bank and its customers, which produces all the solid effects of gold and silver: and when it has done its work, it vanishes into Nothing at the will of the same persons who called it into existence. . . The solid results have been vast tracts of barren moor converted into fields of waving corn, the manufactures of Glasgow, Dundee, Paisley; the unrivaled steamships of the Clyde; great public works of all sorts; roads; canals; bridges; harbours; docks; railroads; and poor young men converted into princely merchants. . . Will any one, with these results staring the world in the face, believe. . . that Credit conduces nothing to Production, and the increase of Wealth! That Credit only transfers existing Capital! . . . Credit is Wealth."¹

Macleod has been charged with counting the same thing twice, once as a physical thing, once as a property-right. On this account his name has disappeared from the authoritative list of economists,² notwithstanding his great discovery of the principle of discount banking, afterwards adopted by the

1 Banking, 330, 175.

2 His name does not appear in Palgrave's Dictionary of Political Economy.

Bank of England. Macleod did count something twice, but it was not the thing and the right to the thing, for he eliminated physical things altogether from economics as belonging to technology. Yet he counted several other "things" twice - he counted two kinds of property rights as two existences of the same thing at the same time; he counted the use-value and the exchange-value of things as two existences; and he even counted the present and the future as existing at the same period of time.

Since he was the first, and indeed the only economist, to analyze the economics of legal rights on the basis of a lawyer's encyclopedic knowledge of the common law,¹ and since his fallacies have confirmed economists in their adherence to Bentham's substitution of pain and pleasure for Blackstone's law and custom, it is essential that we should discover wherein Macleod's fallacies reside, and thereby discover how they may be corrected. For we conceive that, when once his physical metaphors and double-counting are eliminated, the way is clear for building economic theory on Futurity and Property as he attempted to do.

The fundamental idea on which Macleod's system is based, confused though it is, with physical metaphors, is the principle of Futurity contained in the legal meaning of Rights and Duties. Futurity, for Macleod, embodies itself objectively

1 Macleod was selected by a Royal Commission to prepare a digest of the law of bills, notes, etc., reproduced in his Theory and Practice of Banking.

in a measurable quantity, Credit. A proper assignment of Macleod to his place may best begin with the criticism made by Bohm-Bawerk who himself did most of all economists to bring Futurity into subjective economics. Bohm-Bawerk, too, as we have seen, overlapped his subjective Futurity with technological concepts of Efficiency, much as Macleod overlapped his legal Futurity with physical metaphors. He eliminated Macleod's "Rights and Relations" from economic theory, as Macleod eliminated what afterwards was Bohm-Bawerk's psychology. With Macleod, psychological desire, though fundamental, was immeasurable, and therefore furnished no basis for science. But, with Bohm-Bawerk, rights were social relations and involved double-counting.

1
Bowhm-Bawerk observes¹ that economists have alternated between four independent qualities derived from a single physical object - fresh drinking water, for example. First, is the physical thing, the water; second is its inherent objective quality, usefulness or utility; third is its useful service to man; fourth is the right to the water.

The first of these, the physical thing itself regardless of its qualities, could not have been a subject-matter for economists, except as the bearer of its qualities. What they did was to select certain qualities, abstracted from other qualities. Macleod's quality was exchangeability, in the

1 Bohm-Bawerk, E. von, Rechte und Verhältnisse, p. 000, (1874).

physiocratic and classical meaning of the scarcity and utility which constitute "wealth", converted, however, into the legal attribute, negotiability.

If we examine the several meanings thus combined in the word wealth and distinguished by Bohm-Bawerk as his second, third, and fourth items, we shall find that they are really the starting points of three different sciences, each of which goes under the name of "Economics", but each of which is differentiated in modern research and instruction. Bohm-Bawerk's "inherent objective quality" - usefulness or utility, which we name technological use-value - is the subject-matter of Engineering and Agricultural Economics. This is production of use-value without regard to Macleod's test of exchangeability, or "bringing it into commerce". His "useful service to man" is the consumption of wealth, wherein the satisfaction of wants predominates, and this has become the subject-matter of Home Economics. His "right to the water" is the subject-matter wherein legal control or lack of control through rights, duties, liberties and exposures predominates, and this is Political Economy. The Physiocrats and Ricardo were Agricultural and Engineering economists; the Hedonists and Bohm-Bawerk were Home economists; the institutionalists and Macleod were Political economists. By double and treble meanings of words, by analogies, metaphors and personifications, these different disciplines have historically been confused and overlapped. This is inevitable, because each "quality" operates within a "field" composed of the others, and the selection of any one is a mental operation of

analysis, experiment, experience and judgment, guided by the purpose for which the selection is made. The predecessors of Macleod, the Physiocratic and Classical economists, selected the second, namely, use-value, but mixed it with the others, and their "legitimate" offspring is engineering and agricultural economics. The hedonic economists, like Bohm-Bawerk himself, selected the third, namely, useful service to man, and their offspring is home economics. But those who are named the institutional economists, of whom Macleod was a pioneer, selected the fourth, namely, rights of property, and to them belongs properly the name, political economists. Either one is good enough in its proper place as a science, for it selects a certain quality which has quantitative dimensions. The "great bad" is in mixing them. Macleod exhibits this defect, as do the others, in his false analogies and metaphors, which are the usual methods of mixing things. But if we clear away these figures of speech, retaining his principles of Futurity and Property, we shall find that it is his pioneer work that furnishes the intellectual tools for research¹ and action in the modern problems of political economy.

- 1 To cite one instance of personal experience, consult my article on "The Delivered Price Practice in the Steel Market", American Economic Review, Sept., 1924. Also report of Federal Trade Commission (citation?). In this case, before the Federal Trade Commission, Professor Fetter, a "psychological" economist, Professor Ripley, an "institutional" economist and myself, as collaborating witnesses, found that the issue of free competition and discrimination turned, not on physical delivery of the steel, but on "legal delivery" of ownership of the steel, whether it should be at the point of delivery or the point of manufacture. Herein we followed, unconsciously, Macleod. The Commission adopted this finding and the Steel Corporation accepted it without appeal to the Courts.

The confusion arises, in part, from the double meaning of "property". "Most persons", says Macleod, "when they speak or hear of Property, think of some material things, such as lands, houses, cattle, money, etc. But that is not the true meaning of Property. The word Property, in its true and original sense, does not mean a thing; but the absolute right to use and dispose of a thing. . . Property in its true sense means solely a Right, Interest, or Ownership: and, consequently, to call material goods Property is as absurd as to call them Right, Interest, Ownership."¹ It is not "land, houses, cattle, corn", but it is "property" in land, houses, cattle and corn "and all other material things", that economics deals with. Property is property rights; the material things have no value for economics except as they can lawfully be owned and their ownership lawfully transferred. Any other kind of holding or transferring is embezzlement, robbery, theft. Other sciences deal with things - economics deals with legal rights over things.

Having thus eliminated material things, and dealing solely with property-rights, the criticism upon Macleod should be directed, not against his supposed double-counting of things and rights, but against his double-counting of rights themselves. This arose from his forced meaning of the word Credit and from his inability to emancipate himself completely from the physical theories of his predecessors. It was his

¹ Beginners, 23, 24.

critics who did the double-counting of property and things, and they overlook Macleod's assertions that he does not count physical things at all as subject-matter of the science of economics. He, however, left the gap for them in that he used their physical concepts to express his meanings. He counted the same thing only once, as the exchangeability of property-rights, and gave to all property rights the quantitative meaning of credit. Economists had taken it for granted that a commodity was private property. That was therefore a constant quality, and they could devote themselves to the physical productions, transportation, exchange, distribution and consumption of materials regardless of any variability in the assumed constant quality, property rights. But Macleod eliminated the physical things as belonging to other sciences, and devoted himself to the variable factors property rights. Indeed, the fact that a certain species of property-rights, "saleable debts", was independently variable was for him the starting-point of his system. But in this respect saleable debts were not different from property-rights in general - all property is credit, since it is the expectation of receiving something valuable from others.

2. Corporeal, Incorporeal, Intangible Property

That Macleod made Futurity the ruling principle of his system, but mixed it with physical metaphors may be seen from his table of the Past, Present and Future of all Transferable Property. "Property, like Janus", he said, "has two faces, placed back to back. It regards the Past and the Future, and is therefore of opposite qualities. . . Now in all physical and mathematical sciences it is invariably the custom to denote similar quantities but of opposite qualities, by opposite signs. Hence, as a matter of simple convenience, and following the usual custom in physical science, if we denote one of these kinds of property as Positive, we may, as a distinguishing mark, denote the other as Negative. . . If we denote property in a thing which has been acquired in time past as Positive, we may denote Property in a product which is to be acquired in time future as negative."¹

Now, "mathematicians know" that we can perform the same operations with negative signs as with positive signs. And so Macleod represented the past acquisition of commodities, which he named corporeal property, by the positive sign plus (+), and the future acquisition of commodities, which he named incorporeal property, by the negative sign, minus (-). He exhibits these time dimensions as follows:

1 Macleod, Elements, 1:154-5.

-10-

1

THE TOTALITY OF TRANSFERABLE PROPERTY

Property in the produce of the past:	Present	Property in the produce of the future:
Corporeal Property	0	Incorporeal Property
Positive (+)		Negative (-)
Lands, Houses, etc.		Annual Income for ever
Money already earned by a Merchant		His credit
Premises, stock of goods in a Shop		The Goodwill
Money already earned by a Professional Man		The Practice
The printed copies of books etc.		The Copyright
Machines already made		The Patent
The Capital of a Commercial Company.		The Shares
		Annuities of all sorts;
		The Funds: Tolls:
		Ferries: Ground Rent, etc.

This tabular statement and its explanation by Macleod will throw light on the gap which he left for the charge of counting the same thing twice, once as a physical thing, once as a right to the thing.

First, as to his double counting of future time, which explains his double counting of corporeal and incorporeal property. "Corporeal" Property, as seen from his tabular

statement, is property-rights in the physical things accumulated, owned and held from the past up to the present point of time. "Incorporeal Property" is the present expectation of future "produce" not yet in existence or not yet owned. "We may have", he says, "a Right wholly severed from any specific corpus or matter in possession. It may not even be in existence at the present time. Thus those who possess lands, fruit trees, cattle, etc., have the Property in their future produce. Though the produce itself will only come into existence at a future time, the Property or Right to it when it does come into existence is present, and may be bought and sold like any material chattel. Or the thing may be in existence, but it may be some one else's Property at the present time; and only come into our possession at some future time. Thus one may have the right to demand a sum of money from some person at some future time. That sum of money may, no doubt, be in existence, but it is not in our possession: it may not even be in the possession of the person who is bound to pay it. It may pass through any number of hands before it is paid to us. But yet our Right to demand it is present and existing, and we may sell and dispose of it as if it were a material chattel. Hence it is Property; but it is called Incorporeal Property in Roman and English law, because it is a mere abstract Right, wholly severed from any specific substance."

Thus it is that Corporeal Property looks to the Past but Incorporeal Property looks to the Future. The question arises, what are the dimensions of the Present, which lies

between the Past and the Future? At first inspection, it might seem that Macleod intended to represent the Present as a mathematical zero, of no dimensions, and hence non-existent. But it is not so. Macleod, though he introduced Time into economics, did so on the analogy of a commodity, or rather, a quality of his universal kind of commodity - a Debt. Notwithstanding he had Time in his system, he did not have Motion. If he had, then his mathematical zero would have been a changing moment of events between the incoming Future and the outgoing Past. This, by unavoidable physical analogy, is named the Flow of Time. It is the flow of events in ever-present time. With such a meaning, his Incorporeal Property of the future would be continually becoming "Corporeal" - in fact, is ceasing to be property altogether, for the essential of property is Futurity.

But Macleod was too mechanical, physical and objective for that. While he had Futurity he did not have Expectation. If he had, then the Past would have disappeared from his calculation. Time came in mathematical chunks, without the psychology of expectation, like the other intrinsic qualities of commodities. These time-chunks differed in time-length according to the length of the debt. Thus time could be broken up into blocks by breaking up the commodity into time blocks, just as wheat or bricks are broken up into different quantities. Hence they could also be broken up into standard units of time, like the use-values or scarcity values which vary with the size of the commodity. What he thus did was to confuse the movement of Time with the measurement of Time,

and thereby to confuse Time and Space. This he explicitly does when he says, "Debts or Credits are Commodities which are bought and sold like any material chattels. And for the convenience of sale they must be divided into certain units: Coals are sold by the ton: corn by the quarter: sugar by the pound: other things by the ounce. The unit of Debt is the Right to demand £ 100 to be paid one year hence.¹ The sum of money given to buy this Unit of Debt is its Price. And of course the less the Price given to buy the fixed Unit of Debt, the greater is the Value of Money."

Thus if the debt is £100 payable in one year and the banker pays a price, £95, for it, the value of money for one year is £5; but if the price paid by the banker is reduced to £90, then the value of money for one year has risen to £10. A future interval of time, one year, is treated as a present quantity of time for which a present quantity of money is paid, and the difference between the two is the value of money. This is, indeed, the naïve language of the money market. Future time becomes a present quantity. And while his "price of a debt" enabled Macleod to make his discovery in banking policy² - yet, for his general theory, the result was confusion of a point of time with a lapse of time. Consequently, his concept of "the present", which starts with a zero point of time between the past and future, is shifted

1 Elements, 1:169.

2 See below, Discount and Profit.

to a lapse between the beginning and ending of a debt, for the measurement of which the customary unit is an artificial section of that lapse - one year. Thus he blurs the distinction between the movement of Time and the measurement of Time.

It is this that accounts for his curious overlapping, during a period of one year, of his corporeal property and his incorporeal property, which is - not a double counting of a thing and the right to the thing - but a double-counting of time as both present and future during the first year of the future. Thus he says, "Though the yearly products of the land will only come into existence at future intervals of time, the Right or Property in them when they do come into existence is Present, and may be bought and sold like any material chattel, such as a table, a chair, or so much corn. That is to say, each of these annual products for ever has a Present Value: and the purchase money of the land is simply the Sum of the Present Values of this series of future products for ever. Again, although this series of future products is infinite, a simple algebraical formula shows that it has a finite limit: and that finite limit depends chiefly upon the current average Rate of Interest. When the usual Rate of Interest is 3 per cent., the total Value of Land is about 33 times its annual value: consequently 32 parts of of the 33 of the total Property in Land is Incorporeal: the remaining one part only being Corporeal."¹

1 Elements, 1:156-7.

This overlapping of the Past and the Future - of corporeal rights and incorporeal rights - during Macleod's first unfortunate year of the future must be looked upon as a trailing cloud of materialism from the commodity economists. It treats an interval of time like a quantity of time, one year of which exists at a present point of time.

Yet it is inconsistent with his main position, for it applies only to the expected one year's income of use-value to be derived from the corporeal thing. But he does not deal with "use-value", he deals only with the exchange-value of property-rights. His main position respecting both corporeal and incorporeal property rests on its "exchangeability". Economics deals with exchange-values and not use-values, since they alone can be measured. Therefore the right of corporeal property, which he intends, is the right, not to use the thing but is the right to alienate the ownership of the thing and to give a good title to the buyer. This right does not wait a year, and involves no overlapping of Time or rights. The owner can give good title now if he has now the legal power to do so. And he can now obtain the exchange-value of his right to the land, without waiting a year, though he may wait a year to get the crop that constitutes the use-value of the physical land. But the right of alienation, with which alone Macleod deals, begins at the present point of time, and it is this that makes possible the right to the exchange-value which is his subject matter of economics. Since exchange-value is scarcity-value, subject to the law of supply and demand, he therefore counts use-value - the rights of corporeal property - and

scarcity-value - the rights of incorporeal property - as two existences of the same thing, at the same time.

It is doubtless this confusion of physical with incorporeal concepts, that led Macleod to make the fanciful distinction between his plus and minus signs. His plus sign, referring to the past, is superfluous. He did not use it at all in his System. It is, indeed, the familiar confusion of justification with reality. A property-right does not look to the past except for justification. It looks to the future for action and reality. Rights are expected Rights of Action at law. This he insists upon. If so, then property is not two-faced like Janus. It looks forward to collective action. It is an expected "right of action". It has just one face - and inside that face is justification and pleadings.

More serious than his overlapping of past and future for the first year of the future is his failure to count all of the future as existing in the present. Strangely enough the credit side of a transaction is in existence now, but the debt side does not come into existence until the debt is due. Macleod faced this issue squarely and chose the fallacy. He, indeed, quoted eminent bankers in opposition.¹ Cernuschi had said: "The balance-sheet of every individual contains three accounts: existing goods, Credits and Debts. But if we collected into one all the balance-sheets of every one in the world, the Debts and the Credits mutually neutralize each

¹ Elements 1:303.

other, and there remains but a single account: existing goods."

Macleod replied by distinguishing a "duty" from a "debt".

"A debt is not money owed by the Debtor, but the personal duty to pay money." The Roman lawyers held that, when a merchant bought goods and gave his promise to pay in three months, the merchant was "in debt, but the remedy is deferred."

. . But the English law appears to take a different view.

"If an action be brought for the payment before the Credit has expired, it is a maxim of the English law that Credit un-expired may be pleaded under the general issue: that is, the defendant may reply that he is not in debt at all." And it appeared to Macleod that this was "the correct view. When

a merchant agrees to take a three months' bill in exchange for goods, and receives it, he is paid for the goods. . .

Consequently there is no Debt, or duty to pay money, till the bill has matured. . . The goods have become the actual property of the buyer, and his duty to pay three months hence is no diminution of his present property. He has the absolute disposal of it in the meanwhile: and the Creditor has no Right to any portion of it; or to prevent him dealing with it in any way he pleases. Consequently, there are both the Right of Action, and the goods or money, circulating in commerce at the same time."¹

Evidently, herein, Macleod relied upon a legal technicality in asserting that the credit and its Right of Action are in existence now, but the debt and its duty to submit to

1 Elements 1:290-1.

the Right of Action are not in existence now. But each, of course, is in existence now, for the same reason, namely, expectation. The illusion arises from the fact that there are two markets, the "commodity" market and the "money" market, and that the word "money" carries over the physical meaning of a commodity. Each is thus, by analogy, a "commodity market". But Macleod did not effectively distinguish the commodity market from the money market. In this he followed the materialistic illusion that prevails generally. A banker speaks of an increase in his "supply of money" for loan to customers, when all that he has received is an increase in supply of debts owed by customers or other bankers. Customers and speculators ask what "money is worth", when they mean what are debts worth. This materialistic obsession might perhaps have been avoided by Macleod and others if, instead of the metaphor "money market", they had substituted the reality, the debt market. For that is what it is. The "commodity market" is, as Macleod describes it, the market where, not goods are exchanged, but where ownership of goods is exchanged. And the "money market" is, also as Macleod describes it, the market where, not money is exchanged but where ownership of debts is exchanged.

If Macleod had effectively followed up his clue of a debt as a "saleable commodity", not by assimilating a debt to a commodity, but by consistently distinguishing a debt market from a commodity market, he would accurately have described modern business and avoided double counting. The stock exchange and the money market are the two wheels of the debt

market - the large wheels, stocks and bonds, looking years into the future, and the small wheels, bank loans and deposits, looking hours and days into the future. Though stocks are not legally debts like bonds, yet they are becoming debts economically and even legally, and are thus conforming to Macleod's description of a "saleable debt". Stocks are "liabilities" of the business to the stockholders, and even customary dividends are coming to be looked upon as debts owing to stockholders. This is even legally sanctioned in the case of public utilities regulated by law, where the total value of both stocks and bonds and the current rate of interest are used to compute the charges which the public must pay in order that bondholders may receive interest and stockholders dividends. The "public" is debtor and the stockholders, as well as bondholders, are creditors. And it is becoming a legal obligation upon the corporation to pay the customary dividends to the stockholders, almost as much as the legal obligation to pay interest to bondholders.¹ The bondholders are simply preferred creditors, the stockholders are deferred creditors. Intermediate stages have been introduced such as varieties of "preferred stocks" coming between bond-holders as creditors and common stockholders as creditors. Even where there is no legal sanction requiring payment of dividends on common stocks, there has arisen an economic sanction of the nature of good will of investors. During the high-biner period of American corporations the boards of

1 See case of Henry Ford and his stockholders, Michigan case.

directors recognized nor moral or economic, much less legal obligation to pay dividends and maintain the market values of stocks. But with the incoming of thousands and millions of scattered investors and the incoming of the dictatorship period of corporations through the concentration of management in the hands of a mere fraction of the total ownership,¹ the economic necessity of maintaining the goodwill of investors requires dummy boards of directors to adopt a policy of paying customary dividends. So that the stock exchange is the market for a gradation of long-time debts with legal and economic sanctions, from the extreme legally sanctioned bonds through the less sanctioned preferred stocks and many kinds of mere "rights", down to the lowest legally sanctioned but mainly economically sanctioned debts, historically known as common stocks.

In this limited respect Macleod was prophetically correct when he represented all property rights as "debts" and resolved economics into a set of creditor-debtor relations. It is becoming such if economic and moral sanctions enforced by custom are added to legal sanctions enforced by courts.

But it does not follow that debts are commodities. If they are so described then all that we can say is that Macleod is talking metaphor and not science. Commodities are, indeed, similar to debts in that, as we saw from Karl Marx, they are a species of private property and not mere physical use-

1 See Ripley, W. Z., From Main Street to Wall Street; Brookings, R. S. ?

values or scarcity-values. Nor does it follow that the ownership of a commodity is a credit, or Turgot's pledge, and all the world is debtor to the owner - another metaphor. Consequently it does not follow that all property-rights are credits.

Yet what happens on a commodity market is similar to what happens on a debt market - physical things are not exchanged for physical money, but titles of ownership of things are exchanged for short-time debts, just as, on the debt market, titles of ownership of long-time debts are exchanged for ownership of short-time debts. Thus a produce exchange, a wholesale or retail market, and so on, functions with the same banks that function on the debt market. The two wheels are ownership of commodities and ownership of short-time debts. On the commodity market short-time debts are created and immediately sold on the debt market conducted by commercial banks. They are created for the purpose of sale and because they can be sold. The only difference then, is in the object that is owned and sold in exchange for bankers' short-time debts. In the one case it is future legal control of future money income from debtors on the debt market and from future purchasers of commodities at their future prices on the future commodity markets. In the other case it is future legal control of physical things to be handled by laborers under orders in the technological processes of production, transportation and delivery. The debt market looks forward to money income, the commodity market looks forward to the physical output which shall bring a money income. While Macleod is correct when he says that the

greatest invention of the human race is the negotiability of debts, making them as nearly like money as possible, he is incorrect in making negotiability the only quality which makes economics a science, for thereby he fails to make the distinction between the debt market where future money income is bought and sold and the commodity market where future physical output is determined upon. A debt is not a commodity. It is just what he says it is - a saleable debt - and it has its market for debts, the money market.

In this respect, as we can see by aid of the later analysis of Hohfeld, Macleod is chargeable with using the term Rights with the double meaning of a Right and a Liberty. Or, in economic terms, he uses the term Credit with the double meaning of a Right to demand payment of a debt and a Right to demand payment for a commodity. One is the creditor-debtor relation, the other the seller-buyer relation. An explanation of the way in which he fell into this confusion of such opposite social relations will reveal a quite universal fallacy in both legal and economic meanings of words and consequent disastrous social results. It will lead thereby to important distinctions that must be made in order to set forth a proper legal and economic analysis of transactions and going concerns.

Macleod starts, correctly enough, with the proposition that political economy is a science of the "laws of property", and not the laws of physical things or psychological entities. Next, he narrows the subject to the Exchange-Value of these Rights of property, for otherwise it

cannot be a "science" which always must deal with quantities and units of measurement. But, if he has eliminated physical things that come up from the past, and deals only with quantities that are expected to have a future existence, what can be the nature of those future quantities that have a present existence on the markets? They must be something that other persons are expected to do for the owner by way of furnishing to him "the produce of the future". The most general term for this expectation, which has a present existence on the present markets, he says, is Credit.

Credit, therefore, takes three forms. (1) The Present Value, in an actual exchange, of all corporeal property rights. This is his "commodity credit" equivalent to Turgot's "pledge". (2) The Present Value of metallic money, which he names "metallic credit", equivalent to Turgot's "universal representative pledge". (3) The present value of a particular Credit running against a specified debtor. The latter is the usual meaning of credit but it is only a special case of property rights.

If we follow through Macleod's line of reasoning upon this universal concept of Credit, equivalent to Turgot's "pledge" and a quantitative dimension of all property-rights, we shall see how completely he was attempting to reverse the Time factor of the classical economists, and of the Physiocrats, other than Turgot. He substituted Future Time for Past Time throughout the entire subject matter of the science, but treated Future Time like a commodity brought backwards to present markets, as they had treated Past Time brought for-

ward to present markets. He thus justifies Bohm-Bawerk in his comment that Macleod's theory was the legitimate but disowned child of the dominant theories of the period.¹

Bohm-Bawerk is correct in several respects.

In the first place, according to Macleod, Economics must be a physical science, as they had demonstrated it to be. He described the requisites. "A physical science is a definite body of phenomena all based upon a single idea, or quality, of the most general nature. . . Any quantity whatever in which that Quality is found is an element, or constituent, in that science, no matter what other Qualities may be found in it. . . Dynamics is the science of Force: and a force is defined to be 'Anything which causes, or tends to cause, motion or change of motion'." In Economics this Force² is Demand.

But the Economist, as such, does not investigate demand, for that "would introduce the whole of Psychology into Economics". Value, indeed, "in its original sense is a quality, or desire, of the mind: it means esteem or estimation: as we speak of a highly valued friend. But such Value is not an economical phenomenon. To bring value into Economics it must be manifested in some tangible form: as when a person manifests his desire, estimation, or Value for something by giving something in exchange for it to acquire possession of it. . . For an exchange to take place requires

1 Bohm-Bawerk, E., Rechte und Verhältnisse 6.

2 Elements 1:130.

the concurrence of two minds. . . . Hence it is clear that Value is a Ratio, or an Equation. Like distance, the Value of a thing is always something external to itself. . . . A single object cannot have Value. We cannot speak of absolute or intrinsic distance or equality. . . . Any Economic Quantity may have Value in terms of any other.¹"

Thus Macleod reduces economics to a physical science by reducing it to ratios of exchange, and it is these ratios that are Value. This science of Exchange ratios, he shows, was intended by all of the economists, ancient and modern. The term "production of wealth" meant for the Physiocrats, for Smith and Ricardo, obtaining something from the earth or from labor for the sake of "bringing it into Commerce". This was "productive labor"; and "unproductive labor" was that whose product did not come upon the market. "Consumption" was taking something off the market, and they did not include in economics the laws of consumption proper. Macleod shows their inconsistencies, and how these can be avoided by dropping their ambiguous terms production, distribution and consumption, and narrowing the science to what they really intended - the laws of exchange-value.

But, what is it that is exchanged? Is it things or is it the rights to things? Here was the source of their inconsistencies. They thought things were exchanged, whereas every lawyer knows that it is property-rights that are exchanged.

¹ Beginners, 53, 54.

I hand to you a book and you hand to me a dollar. That is a two-fold physical act and has no meaning other than what animals might do in aiding each other. But, in human society, if I do not own that book I cannot lawfully hand it to you and receive payment for it. And even then I cannot make you the owner of that book against all comers unless the law reads into my physical act another act - a mental "act of will" - intending that you shall be the owner, as well as another mental act - your intention to become the owner. Then the law enforces, or is expected to enforce, that two-fold act of will. Does economic science deal with that two-fold physical act, or does it deal with that two-fold mental act? Evidently the physical act is technological and is carried on by manual laborers under the command of owners. But the mental act is proprietary, and actually transfers the title.

Again, I hand to you the book, and you take and keep the book but do not hand to me the dollar. The law now reads into the transfer of the book the same mental act of concurrence of two wills - my intention that you shall own the book and your intention to own it. But it reads also into the same physical transfer another physical transfer - this time an expected physical transfer of the dollar from you to me and my expected taking of the dollar with expected intention to make it my own. How will the economists deal with this pair of two-fold physical acts? They are the same physical transfers as in the preceding illustration, but there has occurred a time-interval. The economists give it up in

despair, says Macleod, and fall into hopeless confusion. Adam Smith, for example, "expressly includes Bank Notes, Bills of Exchange, and other securities", along with shoes and corn, under the term "circulating capital". "All modern writers call Bank Notes Capital". But, says Macleod, "these are simply Rights or Credit". And "when bank notes, mere Rights or Credit, are admitted to be Capital, the definition of the Science as the Production, Distribution and Consumption of Wealth becomes unintelligible. For who would understand the meaning of Production, Distribution and Consumption of Debts or Credits? Whereas everyone knows that Debts of all sorts are bought and sold like any material property. The most colossal branch of commerce in modern times - the system of Credit - consists exclusively in buying and selling Debts: and the exchangeable relations of Debts are governed by exactly the same general Law of Value as the exchangeable relations of material commodities." ¹ The economists, said Macleod, "never made the slightest attempt to bring the subject of Credit and Banking into the general body of the science: ² in fact, they have given up the whole subject of Banking in hopeless despair."

Macleod resolves this difficulty by eliminating the physical things and physical acts altogether and by

¹ Beginners, Introduction and Chapter on Value.

² This may be seen in John Stuart Mill's admirable chapter on Credit, which, however, has no relation whatever to the theoretical foundations of his explanation of Value as based on cost of production. His credit theory is based on psychology, something not admitted to his Ricardian theory of value and cost.

substituting mental acts which give rise to property-rights. If property-rights are themselves credits, then banking is only a special case of the universal principle of credit. And, since credit is quantitative, measured on the markets by exchange-ratios, if the science of economics is made to rest on credit then we have a universal quantitative principle on which to build. It is just as much quantitative when Credit is measured in dollars and cents as is a physical act quantitative when wheat is measured in bushels and pints.

Thus Macleod, when he says that it is rights that are exchanged, instead of things, means thereby that it is Credits that are exchanged, measured in dollars. All rights are Credits, and credit is an economic quantity. Not merely separable credits, like bank notes, are credit, but all property rights are credits. It is not physical commodities that are exchanged - it is total or partial rights to the future value of those commodities. And those rights are credits. A credit is an economic quantity existing in the future, and can be measured in money. When I buy a horse, it is not the horse which I buy - it is rights to the future use of the horse, "against all the world", and those rights are credits. I buy that bundle of credits, a horse, and become a debtor to the seller. If I pay immediately by an assortment of cows and pigs, as in a barter economy, I also sell to him, not the animals, but my rights to future use of the animals. This is the credit, according to Macleod, -- again an economic quantity -- which I transfer to him.

If, now, this exchange of credits, in the barter economy,

is equal, then the transaction is closed. If it is unequal, then there remains a balance due on one side or the other. This balance may be paid immediately in money, or it may be deferred an interval of time. This is where money and credit originate. With money the recipient can collect his debt from the rest of the world by purchasing other products or services. The rest of the world is then his "debtor". Or, if the particular debtor of the transaction does not pay the balance immediately in money, then his duty is shifted to a later time, and this again is a credit. Money and credit are both credits, and are special cases of the universal principle of credit. Money is a general credit against all the world indifferently - the usual meaning of credit is a particular credit against the opposite party to the transaction. But, from start to finish, it is all credits, simply because it is property-rights to future income that are exchanged, and not physical things. If the thing is a physical commodity it is rights to the future use of the commodity against all other persons, for which somebody must pay if he gets it from the owner. If it is money it is again rights to future income, against everybody, for which somebody must give the owner a commodity or service if he expects to get his money. If it is a "credit", in the ordinary meaning, it is a right to future income against a particular person which the latter can satisfy only by paying the owner of the credit the amount of money called for.

Of course these fanciful meanings of words confuse a purchase with a debt and the buyer-seller relation with the

creditor-debtor relation. But this is not counting the same thing twice.¹ Macleod's meaning is plain. By starting with property-rights instead of physical things, he generalizes all such rights into "credits" in order to convert future income into present "economic quantities". Then when "rights" are alienated and acquired at law the "economic quantity" of those rights is measured by the ratio of exchange with a similar quantity. It is this economic quantity of Macleod's property "rights" - a quantity having future time as one of its dimensions - that has been overlooked by his critics. The reason for this oversight is not difficult to see. They simply did not have and did not understand that, as a lawyer familiar with property, the fundamental fact with which Macleod dealt was Futurity. It is this that makes an expected debt-payment exactly like an expected sale of a commodity for money. Each is expected to bring in a money income. By "credit" Macleod means the right to future income. It is this futurity that is overlooked by his critics.

Thus Bohm-Bawerk, his most painstaking critic, who himself did most of all economists to bring Futurity into subjective economics, could not understand Macleod who had preceded him twenty years by bringing Futurity into objective economics. If economics deals solely with property-rights, plainly it deals only with Expectation of Income. And if these expectations are to have a present existence as an

1 But see below on Sales in Section 4, Pay Communities.

economic quantity which can be measured, instead of a psychological feeling which can only be illustrated, then Macleod found ready at hand, in banking and credit, the objective existence of this economic quantity. He need only extend it to all property-rights, whether commodities, money, or credit. If the term credit was fancifully extended, it was because Macleod had, in the idea of credit, a valid principle, Futurity, which united under one head all the special cases of ownership of commodities, of money and of individual debts. It is this objective Futurity that Bohm-Bawerk could not understand when applied to physical commodities. It is plain enough when embodied in banking and investment, but how is it that rights of property in physical goods are also nothing else but Futurity in its objective manifestation? He speaks correctly in naming Macleod a legitimate but disowned child of the dominant theories of the time. He was disowned because he made "credit" the subject matter of his science, instead of things, under the mistaken impression of his critics that he counted both things and credit.

Whatever, then, has exchange-value is credit, and credit is wealth. Macleod traces this idea back to the Physiocrats. Quesnay, first, distinguished Value in Use from Value in Exchange. The former was "goods" (Biens) the latter was "wealth" (Richesses).¹ But, for the Physiocrats, neither Labor nor Rights were wealth. Then Adam Smith added Human

1 Elements 1:58.

Abilities and Credit.¹ Under the title of "fixed capital", he included "the acquired and useful abilities of all inhabitants or members of society." Smith also included bank notes, bills of exchange and other securities. But these are only rights of action, or credit, and not different, except as to "the sources from which they spring", from Funds, Shares, Goodwill, the Practice of a professional man, Copyrights, Patents, policies of insurance, all of which are "exchangeable rights".² Likewise, John Stuart Mill had defined wealth as "everything which has power of purchasing".³

But there was a double meaning of Wealth, says Macleod, in Adam Smith's usage. In the first half of his work wealth was defined as the "annual produce of land and labor"; in the second half as anything exchangeable. Ricardo followed the first half and adopted Labor as the essence of Wealth and Value. Macleod followed the second half and adopted Exchangeability as the essence of Wealth and Value. J. S. Mill followed Ricardo.⁴

1 Ibid., 76.

2 Ibid., 88., See Macleod's Table, p. 10 above.

3 Ibid., 89.

4 Ibid., 80.

3. Discount and Profit

The practicable outcome of Macleod's commodity theory of rights was its bearing upon the discount rate of the Bank of England. Angell has said that "Macleod was the first writer to see that the discount rate is one of the primary determinants of the foreign exchange rates, and that it may be manipulated in such fashion as to correct the exchanges. Credit for the observation is usually given to Goschen, who did not bring out his study for another half dozen years." Goschen was more comprehensive than Macleod "but not consciously trying to do anything new. Thus at one place Macleod says that the major causes of a drain of specie are the indebtedness of the country; a depreciated paper currency; and a difference in the rate of discount, between any two countries, more than great enough to pay the cost of transporting bullion." Macleod also "came quite close" to "interpreting the short-run relations between money and prices in terms of changes in bank reserves and in discount rates", afterwards, in 1883, given its "complete and unequivocal form" by Sidgwick, and more completely by Marshall, in 1888.¹

The way in which Macleod came about his theory of manipulating the discount rate and thus regulating both the drain of specie and the level of domestic prices was through his theory of the "manufacture of debts" and the public purpose rather than private profit of the Bank of England. "A banker",

1 Angell, James W., The Theory of International Prices, 138, 118, 123, (1926).

says Macleod, "never buys a Bill with Cash in the first instance. He buys the bill, which is a debt payable at a future time, by giving his customer a credit in his books for the amount of the debt, less the discount: which is a right of action the customer has to demand the money if he chooses. That is, he buys a right of action, payable at a future time, by creating or issuing a right of action, payable on demand." From this it follows that bankers are "not intermediaries between persons who want to lend and those who want to borrow. The fact is, that a banker is a trader, whose business is to buy Money and Debts, by creating other Debts." Consequently the banker's profit does not consist in "the difference between the interest he pays for the money he borrows and the interest he charges for the money he lends. The fact is that a banker's profits consist exclusively in the profits he can make by creating and issuing credit in excess of the specie he holds in reserve. A bank which issues credit only in exchange for money, never made and can by no possibility make profits. It only begins to make profits when it creates and issues credit in exchange for debts payable at a future time." "The essential and distinctive feature of a bank and a banker is to create and issue credit payable on Demand; and this credit is intended to be put into circulation and serve all the purposes of money. A bank, therefore, is not an office for borrowing and lending money: but it is a manufactory of credit." "Just so much as he can maintain his credit in circulation over and above the cash he keeps in reserve, he increases his profit, and he practically

increases the capital of the country."¹ These quotations from Macleod are the logical deductions from the commodity theories of the physical economists who included metallic money, bills of exchange and bank notes in the circulating capital of the country. If commodities are manufactured, bought and sold, and if commodities are circulating capital, then the banker, whose business it is to create a "saleable debt" which performs all the functions of metallic money, is a manufacturer.

Macleod also logically follows the physical economists in his failure to distinguish interest from profits, a defect which itself is involved in the commodity theories. Commodities are manufactured and sold for the sake of profit, and just as the wholesaler buys from the manufacturer at a certain price and sells to the retailer at a higher price, so the banker buys a debt at one price, by discounting it, and sells it at a higher price - its face value. For "discount" and "interest" are only two different methods of computing the same rate of profit, with an unimportant difference in the computation. By advancing the complete sum and waiting till the end of the year, the "profit" is Interest. By retaining the profit at the time of the advance, and advancing² only the difference, the "profit is Discount.

This discounted value, then, is the price of the debt. The banker manufactures his own demand-debt to serve as

1 1 Banking 325, 326, 357, 358.

2 1 Banking 392.

money, and with this he buys the time debt of his customer, which afterwards increases in value. Thus he says, "the Unit of Debt is the Right to demand L100 to be paid one year hence. The sum of money (demand debt) given to purchase this unit of debt (time debt) is its Price: and of course, the less the price given to buy the fixed unit of debt the greater is the Value of Money. But in the Commerce of Debts it is not usual to estimate the Value of Money by the price paid for the debt. As money naturally produces a profit, it is clear that the price given for a debt payable one year hence must be less than the debt. The difference between the price and the amount of the Debt is the profit made by buying it. This difference, or Profit, is termed Discount. And it is clear that as the Price of the debt increases or decreases, the discount or profit decreases or increases. In the Commerce of Debts it is always usual to estimate the Value of Money by the discount or profit it yields. Hence in the Commerce of Debts the Value of Money varies directly as Discount. This rule embraces both branches of commerce - the commerce in goods and the commerce in debts. The Value of Money varies inversely as price and directly as discount. . . In the commerce of commodities the value of money means the quantity of the commodity it can buy: in the commerce of debts it means the profit, or Discount made by buying the debt. . . The rate of interest or discount is the Amount¹ of Profit made in some given Time, as the year."

1 Banking 57-59.

Furthermore, this amount of profit or discount, which is the "value of money", is determined in the same way in which the profits of other business men are determined. "A trader makes profits by buying goods at a lower price from one person and selling them at a higher price to another. So a banker buys a commercial debt at a lower price from one person - namely, his own customer - and sells it at a higher price to another - namely, to the acceptor, or debtor. Thus the debt the banker buys is increasing in value every day from the time he buys it until it is paid off. It, therefore, produces a profit, and is therefore circulating capital, just in the same way, and for the same reason, that the ordinary goods in any trader's shop are."¹

Here, of course, is failure to distinguish an increase in value due to a period of waiting, from an increase in value due to buying in a cheap market and selling in a dear market. It is failure to distinguish a future lapse between two points of time on the same debt market from a present point of time on two commodity markets - in other words, failure to distinguish futurity from scarcity. This distinction is immaterial if the banker is a manufacturer of demand debts, in the present, serving as money with which to purchase time-debts manufactured also in the present by business men. Both are commodities; both are created for the sake of future profit; both are exchanged upon the same market at the same time; the difference being that the banker's debt is

1 1 Banking, 357, 358.

manufactured to circulate as money, but the business debt is created to obtain that money. Yet it was this idea of private profit to be made upon the manufacture of debts that enabled Macleod to set forth the public duty, as against private profit, of the Bank of England.

In the first place he had to clear the ground of the confusion of ideas which looked upon bank notes as different from bank deposits. It was this confusion that underlay the Bank Act of 1844 which separated the Bank of England into two departments, the Issue Department for bank notes and the Banking Department, for bank deposits. In the issue department, according to this Act, no issues of bank notes, beyond an original quantity authorized in the statute, could be made except upon deposit by the customer of an equal amount of gold. Bank notes had come to be looked upon as in some way a function of government, and hence all discretion in issuing them beyond the amount of gold held against them should be taken from the Bank by compelling the Bank to retire as much gold as it issued in notes. But bank deposits were considered in the Act to be a purely private and even secret affair between the bank and its customers in which the government should not interfere.

But Macleod contended that each was of exactly the same nature, legally and economically. Legally each was a demand-debt created by the Bank to serve as money. A bank deposit was as much an "issue" of money as a bank note, because each was the manufacture of a debt payable in gold on demand. And economically their effects were just the same, because each

served the same purpose of drawing out gold on demand for export. Deposits are "merely so many bank notes in disguise. They are nothing but an enormous superstructure of credit, reared upon a comparatively small basis of bullion: exactly like the Issues of Notes. . . These apparent deposits, instead of being so much cash, are nothing but the credits or rights of action the banks have created as the Price with which they have purchased the Cash and Bills which figure on the other side as Assets. A sudden increase in Banking Deposits is, in reality, nothing more than an inflation of credit: exactly similar to a sudden increase in Bank Notes . . . and the diminution of Deposits is not a diminution of deposits in Cash: it is a contraction of Credit."¹

The result of the Bank Act of 1844 turned out as Macleod predicted. According to the Act, if gold is withdrawn from the Issue Department for export then the Bank reduces its notes by just the amount of the withdrawal. The theory was that this reduction of notes would cause a reduction in the prices of home commodities so that it would be more profitable to export commodities than bullion, and so would stop the drain of gold.² But, behold, the Bank Act left a "gap" in the banking department. Gold could be withdrawn for export from that department merely by presenting checks and demanding gold, and there would be no reduction in the volume of bank notes although gold was leaving the country.³ "There are, in reality, two leaks to the ship."

1 1 Banking 329.

2 Ibid., 412.

3 2 Banking, 342, 343.

The framers of the act could only perceive one; and they only provided against one: and were utterly astonished to find the ship rapidly sinking from the other leak, which they had forgotten. The Bank Act had to be "suspended" in the crisis of 1847 in order to permit the Bank to issue notes in excess of the gold which was being drawn off from the issue department to the banking department, and thus save business men and other bankers from "total destruction".²

The difficulty, according to Macleod was in the older theory "that gold was only sent to pay a balance arising from the sale of goods, and that therefore it must cease of itself whenever these payments were made. But this is a profound delusion." "If the Rate of Discount in London is 3% and that in Paris is 6%, the simple meaning is that gold may be bought for 3% in London and sold for 6% in Paris. But the expense of sending it from one to the other does not exceed $\frac{1}{2}\%$, consequently it leaves $2\frac{1}{2}\%$ to $2\frac{1}{3}\%$ profit on the operation. . . . When the rates differ so much. . . . persons in London fabricate bills upon their correspondents in Paris for the express purpose of selling them in London for cash which they then remit to Paris and which they can sell again for 6%. And it is quite evident that this drain will not cease so long as the difference in the Rates is maintained. Moreover, merchants in Paris immediately send over their bills to be discounted in London, and, of course have the cash remitted to them. The only way of arresting such a drain is to

¹ Ibid., 342, 342.

² Ibid., 170.

equalize the Rates of Discount in the two places."¹

And he set forth this general principle: "When the Rate of Discount between any two places differs by more than sufficient to pay the cost of transmitting Bullion from one place to the other, Bullion will flow from where discount is lower to where it is higher."²

Of this principle he said, "however it might have been known among commercial men, it had never yet, that we have seen, found its way into any commercial book whatever, and most certainly had never been brought forward prominently before the public in Currency discussions, as a cause of an adverse Exchange, wholly irrespective of any indebtedness of the country, or of the State of the paper currency."³

How, then, is this Rate of Discount to be raised when gold is leaving the country and lowered when it is coming into the country? Can it be left to the private competition of bankers, each of them making private contracts with their customers for the profit of each? The Bank of England directors had contended that the rate of discount was a private affair between themselves and their business customers and their banking customers who kept their reserves at the Bank, each in the pursuit of his own interest in seeking his own profit. But Macleod showed that competition caused an "inordinate increase" in the number of bankers, leading to low rates of discount when the rates should be high to prevent the export of gold.⁴ Moreover,

1 1 Banking, 418.

2 2 Banking, 344.

3 Ibid.

4 2:139.

"the interest of the merchants always is to get accommodation as cheap as possible." ¹ Now that the Bank of England, by the custom that had grown up, had become the repository of the gold reserves of the country banks, its discount policy, in times of foreign drain of gold, must control the policy of the other banks. Hence it becomes the duty of the directors of the Bank, in advance of a crisis, to act against, not only their own immediate interests, but also against the immediate interests of the business public and of the other banks, if the gold reserves of the nation are to be kept intact. The Bank's private interests must be subordinated to its public duty. "It is, says Macleod, "the imperative duty of the Bank of England to keep a steady watch upon the Rates of Discount of neighboring countries, and to follow these variations so as to prevent its being profitable to export bullion from this country." ²

In the depression of 1857 the Bank directors, for the first time, acted upon this principle of public duty uttered previously by Macleod and headed off the outflow of gold by early advances in the discount rate. And John Stuart Mill testifying in 1857 before a parliamentary committee could say that while the Bank, prior to 1847 had acted on the principle that they had nothing whatever to consider but their interest as a bank; and that while in the Act of 1844 Sir Robert Peel, its author, had assured the Bank that "anything they did as mere bankers, in the management of their deposits, was no

1 2:366.

2 1 Banking, 418.

concern of the public, but only their own concern", yet since 1847 they had become aware "that an establishment like the Bank is not like other bankers, who are at liberty to think that their single transactions cannot affect the commercial world generally, and that they have only their own position to consider. The transactions of the Bank necessarily affect the whole transactions of the country, and it is incumbent upon them to do all that a bank can do to prevent or mitigate a commercial crisis. This being the position of the Bank, and the Bank being much more aware of it since 1847 than they were before, they have not acted so entirely as before on the principle that they had nothing to consider¹ but their own safety."

Thus the Bank of England was the first great concerted movement of private business men under modern capitalism to acknowledge their responsibility to the public, arising out of the fact that national welfare had come to depend upon them by the very fact of their concerted action as a great corporation, and wholly apart from the acts of government which had expressly left them free to pursue their own interests in their own way. It required, indeed, the strong pressure of public opinion before they were willing to accept the theories of economists like Macleod, but Macleod himself could say, in the 6th edition of his work on Banking, "The

1. Quoted by Beckhart, B. H., The Discount Policy of the Federal Reserve System 28 (1924). This volume gives an excellent historical sketch of the bank-rate discussion in England and the resulting formula of discount policy based on the experience from 1797 to 1850.

necessity of passing the Act of 1844 was a deep discredit to the Directors of the Bank. It was a declaration that they were incompetent to manage their own business. But now that they have shewn that they are perfectly able to do so, it is¹ no longer necessary."

1 2 Banking, 367. See recent proposals of the Midland Bank (date?) on the necessity of changing the Bank Act so as to afford elasticity and greater discretionary power, similar to that authorized in the Federal Reserve Act.

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4. Pay Communities

We have suggested above the ultimate source of Macleod's fallacies respecting debts as commodities manufactured by bankers, and interest as profits derived from that manufacture. It is a fallacy respecting Time. A debt is not a Commodity - it is an Institution. And the Institution consists in two collective practices respecting future time which have gradually been introduced through custom and group action, namely the enforcement of promises to pay and the negotiability of these promises. With these two collective devices the mere promise to pay at the termination of a future lapse of time - either a specified date as in the case of time-debts, or an unspecified date as in the case of the demand debts of bankers' notes and deposits - is made transferable on the markets like a commodity. This time-debt has a present "mass" of value; this mass has a price which is also a promise to pay - in this case a promise to pay on demand.

What, then, is this object which is to serve as the means of payment? Is it a commodity, or is it also merely an institution created by the collective action of society?

¹
Knapp has given the answer. The means of payment is not a commodity, or gold, or silver, or other corporeal thing. It is merely a collective release from debt, which also, by the device of negotiability, is made to circulate like a commodity. If, then, both the debt, or promise to pay, and the release from debt, or means of payment, are institutions transferable

1 Knapp, Georg Friedrich, The State Theory of Money. (Translated and abridged 1924. First German ed. 1905) Citations are to the translation. See also Review by ?

like commodities, but are not commodities, we must look elsewhere for the tangible thing which is the real commodity of industry, agriculture, transportation, manual labor, consumption and enjoyment. We have found that tangible thing made available in the fact of legal scarcity-control, by means of which the economic inducement and sanctions of persuasion, coercion, command, obedience sooner or later bring the resources of nature into physical control of him who has legal scarcity-control.

Knapp, in many respects, is the German Macleod. Like Macleod, he rejected paper money and all taint of John Law's theory of redeeming paper money in land or anything other than gold or silver metal recognized by statute as legal tender and internationally valid according to its purity and weight. Likewise, he founded his State Theory of Money on an exhaustive study of German and Austrian experience, as did Macleod his Common Law Theory on British experience. But, unlike Macleod, he did not carry over from the physical economists any metaphors whatever of a commodity. He distinguished what he called "the essential" from "the accidental". The essential was legal "means of payment"; the accidental was metal or paper. Indeed, in order to safeguard himself from metaphors and to "replace the metallistic view" by an institutional view "founded on Political Science", he invented a terminology of Greek and Latin terms, as do the biologists when they call an ape an *hylobates*. So metallic money is *hylogenic lytric* - a means of release from debt by weighing a material, but paper money is *auto-genic lytric* - a means of release from debt by decree, legislation, or court decision.

For, what is "the essential" of a means of payment? It is to be found by a generalization that will include paper money, like the Austrian State Notes of 1866, as well as metallic money. "For on close consideration it appears that in this dubious form of 'degenerate' money lies the clue to the nature of money, paradoxical as this may at first sound. The soul of currency is not in the material of the pieces, but in the legal ordinances which regulate their use."¹ The "metallist" or "numismatist", says Knapp, deals only with the "dead body" of money. He cannot explain either currency, circulation or paper money. Paper money "may be a dubious and even dangerous sort of money, but even the worst sort must be included in the theory. Money it must be, in order to be bad money."² Knapp takes care to say that he does not recommend paper money pure and simple. "I know no reason why under normal circumstances we should depart from the gold standard."

Knapp's "essential" of a means of payment rests upon two distinctions - the difference between a releasable and a non-releasable debt, and the difference between a commodity and a means of payment.

A slave, we may say, is subject to a non-releasable debt, which is a life-long duty to serve his master, and this debt is imposed and sanctioned, not by the master, but by the administrative force of the community of which the master is a member and the slave an unwilling participant. But a free-man - the master himself - is subject mainly to releasable

¹ Ibid., 2.

² Ibid., 1.

debts (lytric debts), from which, however he can free himself by offering something (lytron) which the community deems acceptable as a ransom, emancipation, or payment.

Knapp does not enter upon the historical development of releasable debts out of non-releasable debts, which may be distinguished as the "method" of release contrasted with his "means" of release. But the methods and the means taken together are the story of Capitalism itself, for that is the story of the gradual, and even yet incomplete, substitution of the liberty-exposure relation for the right-duty relation. A debt, as Macleod maintained, is the economic quantity of which duty is the personal behavior. To release from debt is to release from duty. Historically the stages are gradual, from the enforcement of formal and implied contracts, however onerous, to successive enlargements of the methods of release, all the way from abolition of imprisonment for debt, bankruptcy laws, wage exemption laws down to the abolition of rent contracts in Ireland, the abolition of public utility contracts in America, the gradual abolition of labor contracts, of truck payments and so on, with the substitution of what are deemed by public authorities to be "reasonable" service and reasonable means and methods of compensation. Debts and duties have thus been changed by changing the methods and means of release from debt. Capitalism is thus the present status of releasable debts, and Knapp's definition of means of payment is a special case of the general principle of the changes in means and methods that have been going on through the working rules of society for release from debt.

This is "the essential" of money, according to Knapp. Paper money is not in reality a "debt" of the State, although it always carries a promise of the State to pay - it is, like metallic money, a means of release from debt. "It frees us from our debts, and a man who gets rid of his debts does not need to spend time considering whether his means of payment were material or not. First and foremost it frees us from our debts towards the State, for the State, when emitting it, acknowledges that, in receiving, it will accept this means of payment. (Verify the translation) The greater the part played by the taxes, the more important is this fact to the tax-payer. Payment with non-material money is for the country of its origin just as genuine a payment as any other. It is sufficient for the needs of domestic trade; in fact it makes such trade possible. It does not indeed satisfy certain¹ other demands, but the phenomenon is not in itself abnormal."

This doctrine of Knapp has been characterized as "dangerous". Witness Germany, who "followed" Knapp during and after the War.² Such criticism is again a confusion of justification with fact. Paper money may not be justified, but it is a fact. It certainly releases debtors and taxpayers from their debts. So also does the American gold standard. The question is, Does it release them reasonably?

Knapp's subordinate distinction, the difference between a commodity and a means of payment, rests upon the first, the

¹ Ibid., 52.

² Anderson, B. M., Value of Money, p. 000.

difference between a releasable and a non-releasable debt. He defines a commodity as an "exchange-commodity", starting from what he regards as "sufficiently elementary ideas". In this he states explicitly what all economists and common sense imply in the word "commodity" itself, and the word "exchange" does not add to the meaning. An exchange-commodity is a commodity.

But is an exchange-commodity a means of payment? We cannot tell if we look only to "one transaction". "When, however, in any society, for example, a State, it is a custom gradually recognized by law that all goods should be exchanged against definite quantities of a given commodity, e. g., silver, then, in this instance, silver is. . . a general exchange-commodity. . . an institution of social intercourse; it is a commodity which has obtained a special use in society, first by custom, then by law."¹

This socially recognized exchange-commodity is always a "means of payment". But "it is untrue that every means of payment is a socially recognized exchange-commodity. . . In order to be a commodity it must, in addition to its use in the manner provided by law, also be capable of a use in the world of industry and art. The sheets of paper, which are all the eye of the craftsman sees in paper money, are an example of an object which has no other industrial use. They are therefore not an exchange-commodity, though they are a means of exchange."² "A man who can employ the exchange-

1 Ibid., 3.

2 Ibid., 4.

commodity he has received for some craft, but cannot pass it on in circulation, owns a commodity but not a means of payment.¹"

This metal, when used as means of payment obtains a name, the "pound", or "dollar", which becomes in course of time, purely "nominal" so far as the original weight was concerned. And the name is even carried over to paper money, so that, from the standpoint of original weight it is not a reality - the meaning has been transferred to another purpose, a "unit of validity" for the payment of debts. It is now defined, not really, but historically.

Hence, like Macleod, Knapp distinguishes money as a means of payment from the coins or paper which are the mere "disks", "signs", "tokens", "tickets", having a legal significance (chartality, legal tender, government tender) independent of their substance. "The word 'ticket' is then a good expression, which has long since been naturalized, for a movable, shaped object bearing signs, to which legal ordinance gives a use independent of its material. . . . The meaning is to be found out not by reading the signs, but by consulting the legal ordinances."² Formerly, before legal ordinances took effect, payment was made by weighing (pensatory); now payments are made by proclamation (chartality).

This legal significance arises from custom, then is taken over by law which makes it universal within the jurisdiction of the State. In either case this significance is

¹ Ibid., 6.

² Ibid., 32, 33.

made clear by Knapp's concept of a "pay-community". A bank and its customers "form, so to speak, a private pay community; the public pay-community is the State."¹ What happens in this "pay-community" is that the members pay their debts to each other in "units of validity" which may or may not be "units of value", but they are "valid" because acceptable to the community, by which is meant that the community, as a whole, makes them valid by releasing debtors from further duty to pay.

A means of payment, then, differs from a means of exchange in that the latter is a property of commodities having exchange-value, but the former is a socially recognized ransom, or release from obligation otherwise imposed upon the individual by the community of which he is a member or participant. One is measured by a unit of exchange-value, the other by a unit of debt-paying validity. One is economic, the other is legal. This unit of validity is also a unit of value insofar as it has exchange-value, though we know from German post-war experience that it may have validity but not value.

Thus Knapp distinguishes between releasable debts (lytric, lytron) and non-releasable debts. A slave, we may say, is subject to a non-releasable debt, which is a life-long duty to serve his master, and this debt is imposed and sanctioned, not by the master but by the administrative force of the community of which the master is a member and the slave a participant. But a freeman, or the master himself, is

1 Ibid., 134.

subject mainly to releasable debts (lytric debts), from which, however, he can free himself only by offering something (lytron) which the community deems acceptable as a ransom, emancipation, or payment.

It will at once be seen that this concept of "means of payment", or emancipation from debt, is a universal principle applying to all groups from primitive times to the most modern, insofar as they continue to be "going concerns", but with widely different rules respecting the instruments and performances that carry the signs of release. Herein Knapp advances beyond Macleod, by means of his generalized concept of a "pay community". We need to go only a step further and inquire, what are the sanctions by which the "pay-group" enforces upon members and participants the acquisition and use of that instrument of release from debt which is accepted by all members of the group as a means of payment. There are not only the "legal sanctions" of physical force, to which a purely "state theory" is limited, but there are the moral and economic sanctions of what he designates "private pay-communities". The legal sanctions may be designated legal tender or legal performance - the others are "extra-legal" but customary tender or customary performance. Take his instance of a commercial bank and its customers. What compels the customers to accept, in full payment of debts owing them, the demand-debts of a solvent bank evidenced by such a ticket as a "bank check". The bank debts are not legal tender, either by statute-law or common law, enforced by physical force, - they are customary tender. Yet their acceptance by creditors, within customary limits, is economically, though not legally,

compulsory, for any one who wishes to do business or to continue in business in that community must accept these checks. If he persistently refuses them nobody within that pay-community will enter upon the ordinary business transactions with him. He is as effectively compelled to accept the customary tender of "good" bank checks in payment of debts owing him as he is compelled to accept legal tender. It is not only a matter of convenience with him, nor only a voluntary choice of alternatives, nor only the expectation that he in turn as a debtor can also pay his own debts with the same or equivalent bank checks, nor the expectation of redemption in legal tender, - it is a matter of economic compulsion - and it is the economic sanctions of profit or loss, success or bankruptcy, that enforce acceptance of the customary tender of bank checks. So that ultimately nine-tenths of the debt payments in the United States are performed, not by legal tender, but by customary tender.

The same is historically true of other "pay-groups". Means of payment originate as customary tender and may or may not afterwards become legal tender. For example, to transfer Knapp's Germanic history to Anglo-American pay-communities, at the Fair Court of St. Ives, in the year 1300,¹ Richard May complained that John Stanground had unjustly broken a covenant in that he had paid his debt for an ox and a pig in "crockards and pollards" instead of sterling. At the time when the covenant was made one crockard or pollard was

¹ 23 Selden Society 80, 81.

customarily rated at one penny sterling, but between the date of the debt and the date of payment the king issued a proclamation prohibiting crockards and pollards throughout England, "so that no one should receive them save only at the rate of two crockards or pollards for one penny sterling". The jurors of the Fair Court thereupon decided that the king's ordinance should prevail and that John should pay to Richard an additional crockard for each penny sterling owed, with damages for "unjust detention".

The interpretation by Knapp, applicable to such a case as this, turns on the meanings of his terms "unit of value", and "unit of validity". He makes them identical, not bothering about the difference between legal validity and economic value. The terms are void of economic or physical meaning and are purely legal terms with a "nominal" meaning. This "nominal" meaning is that of a unit of debt-paying validity, recognized, named and enforced by the pay-community, whether it be the community of buyers and sellers at the Fair of St. Ives, or the community of banks and business customers of the Federal Reserve System, or the community governed by a mediaeval king, a modern legislature or modern dictator. Individuals may greatly lose economic value, and others greatly gain that same economic value at their expense in the transaction, as did Richard gain and John lose when the physical or economic content intended by the words "sterling" or "crockard" was changed. But this is not the legal essence of the means of payment. The essence is that, when the payment is made in customary or legal tender, then the pay-community releases the debtor of any further obligation to pay.

This seems common-place enough, and perhaps to be taken for granted without comment, as it was by the physical and hedonic economists. Its significance emerges, of course, when paper money or bank notes or bank deposits take the place of metallic money and are enforced upon nations and even the community of nations by the exigencies of war or the scarcity of gold.

Knapp places first importance, as the ground which maintains a "means of payment", upon the need of paying compulsory debts owing to the State, which Edie names "government tender",¹ and second importance upon the payment of voluntary debts owed between citizens or between the State and citizens and payable in legal tender. The first we shall name Taxes, as typical of all compulsory debts and "government tender", and the second should be named Debts as typical of voluntary debt and the usual meaning of legal tender. Taxes are compulsory debts, such as dues, fees, assessments, customs dues, etc., which the citizen owes, not by reason of his private voluntary initiative, or consent, or bargaining, but by a process of rationing by the State according to ideas of ability to pay or otherwise. They are more accurately named authoritative debts, since they are imposed by command and not invited by persuasion. But voluntary debts are debts proper, since they arise out of persuasion according to rules laid down by custom, common law, or statute, and are therefore more accurately named authorized debts. Authoritative debts

1 Edie, Lionel D., Money, Bank Credit and Prices 46 ff. (1928).

are taxes, authorized debts are debts.

The distinction holds likewise for private associations. The dues, charges, assessments, payable by members to a private association are authoritative debts, of the nature of taxes within that concern, while transactions between members according to rules of the association give rise to authorized debts. Each kind of debt is equally enforced by the "pay-community", and the payment of each is equally compulsory, but the one originates without bargaining, the other with bargaining. The distinctions shade into each other, as shown by Seligman,¹ but they are clear enough to furnish a basis for what follows.

The question raised by Knapp is, Which is more influential as the occasion for introducing an effective means of releasing individuals from their debts to other individuals? Is it taxes, the authoritative debts owed to the State, or is it the authorized debts owed between citizens? Knapp answers: the former. "For", he says, "as soon as the State has elevated a kind of money (say the State notes) into the position of valuta (receivable and payable by the State), it cannot in its judicial capacity require that the private debtor should perform his lytric obligations (releasable debts) in one way and the State as debtor in another. So, if from political necessity the state announces that henceforth it will pay in State notes, as fountain of law it must equally allow the State notes to suffice for other payments. . . . When there is a dispute the State must decide as a judge that a payment

1 Seligman, E. R. A., Essays on Taxation (?); Social Theory of Fiscal Science, 41 Pol. Sci. Quar., 3, 29 (1926).

in State notes is sufficient. If it did not, it would, as judge, be condemning its own course of action, and contradicting itself."¹

While this is logically true yet historically the answer to Knapp's question must be relative to the two factors, the existing institutions and the urgencies of the State. When the institution of credit becomes dominant in the community against the older institution of metallic money, either by custom (commercial banks as above) or by law (State Treasury notes, National Bank notes), the means of payment are dictated more by the need of paying debts than by that of paying taxes. At the same time if the needs or policy of the State are dominant for purposes other than the payment of private debts, then it is these peculiar public needs that dictate what shall be used as means of payment in private transactions.

Thus the two purposes of means of payment operate together and, historically have never been separated. The kings of England, prior to the year 1300, had dictated that only sterling should be accepted in paying all debts owing to the sovereign, but it was not until the king prohibited crockards and pollards in private transactions that the "pay-community" of St. Ives eliminated customary payments in crockards.

Means of paying private debts are inseparable from means of paying taxes. What the state decrees by fiat to be a means of paying taxes, its own courts, indeed, would logically decree as a means of paying private debts. But other courts, like

¹ Knapp, 110.

the merchants' court of St. Ives, would continue their own customary means of payment until the State actually prohibited them.

The more important distinction to be made, therefore, is not that between taxes and debts, as to which is predominant in designating the current means of payment, but is the distinction between public purpose and private purpose, as to which shall prevail in designating the means of payment of both taxes and debts. Is it the customs of business with their private purposes, or is it the policy of government, whether legislative, administrative or judicial, with its public purposes? These public purposes do not turn merely upon the collection of taxes, which are only a means of carrying out the public purposes, and, indeed they are not inconsistent with reduction of taxes, and therefore with their lessening importance in prescribing the means of private payment.

For example, the procedure at the Court of St. Ives was repeated at the beginning of the Civil War in America. The Congress at first issued its "demand notes" for the purchase of war materials, and usable as the means of payment of taxes, but not legal tender in private payments. But these were not accepted by the public in payment of private debts, since they were at a premium for payment of custom dues, and so went out of general circulation. Hence, in the exigencies of war, the next step was taken to compel circulation by the issue of treasury notes (greenbacks) with the legal tender quality of payment of private debts, (though not legal tender in payment of customs dues), and authorizing them to be re-issued in payment of government purchases but not in payment

of the interest on the public debt. The Supreme Court, interpreting the constitution, at first denied the authority of Congress to give the legal tender quality to this paper money, but later reversed itself, and the legal tender green-back became a permanent means of payment of private debts. The grounds of this reversal were put, first, on the preservation of the Union in time of war, and afterwards on the supreme authority of Congress to declare public policy in times of peace. Thus public purpose was recognized as predominant over private purposes in determining the means of payment of private¹ debts.

Again, when the change was made from bimetallism to the gold standard, debtors were deprived of their former option of paying in silver, but the public purpose prevailed, of establishing the same gold standard as that of England and Germany, in order to facilitate foreign trade.

Again, in 1910, when it was determined to establish the gold standard in the Phillipines, the insular government prohibited the export of silver coin. A merchant brought suit in the Federal court against the Phillipine government on the ground that he was being deprived of his private property "without due process of law", a kind of deprivation prohibited by both the constitution and the enabling act which set up the Philippine government. His silver coin was worth 8 cents per dollar more in Hon Kong than in Manila, and he was therefore being deprived, not of his coins, but of their

1 8 Wall. 603 (1869); 12 Wall. 457 (1870); 110 U. S. 421 (1889).

alternative higher scarcity value. This scarcity value was conceded to be private property, but the supreme court held that "due process of law", in this case, meant the public purpose of establishing a gold standard, and, although the Philippine government may not have acted wisely, yet its act was a matter of predominant public policy and therefore the merchant was deprived of his property, not without, but with¹ due process of law.

These four instances from Anglo-American history indicate the general principle, maintained by Knapp, that the State, as the supreme "pay-community", establishes the means of payment by mere fiat. But they indicate also that the general principle is not to be derived from the circumstance of payment of taxes, which is only a special case, but from all the circumstances under which a public purpose is deemed by the governing authorities, - legislative, administrative or judicial - to be supreme over private purposes. In all of these cases private property - or rather the scarcity-value of private property - was taken from one class of people, either creditors or debtors, either buyers or sellers, and transferred to another class of people, debtors or creditors, buyers or sellers, by the mere fiat of government in declaring what should be the lawful means of payment.

They indicate also, more clearly, what is Knapp's meaning of his term "unit of value". It is, indeed, a unit of legal validity, not a unit of scarcity-value. "Accessory kinds of money", he says, "with a position agio (e. g. gold and silver

1 Lin Su Fan vs. U. S., 218 U. S. 302 (1910).

in the greenback cases, silver in the Philippine case) if their discs are used as a commodity, are worth more lytric units (debt paying capacity) than they are valued in as means of payment; "to have value" (in exchange) is a property of commodities; to have validity is a legal property of chartal (authoritative) pieces."¹ Legal validity releases the debtor from legal control by the creditor. And if, in economic terms, this is to be described as a unit of value, the "value" is a new kind of use value - the use-value of human institutions. A bushel of wheat or a dollar of physical gold, has a physical use-value of a technological character in the arts and industry. Out of them can be made flour and jewelry.² But the use-value of a human institution - in this special case - is the two-fold usefulness to the creditor and debtor - to the creditor, in that the pay-community relieves him of the burden of compelling his debtor to pay; and to the debtor, in that after payment it releases him from further duty to pay. This is, indeed, the most important of all "social use-values", for upon it is built, not only Capitalism but Feudalism and Communism.

Here, however, comes to light the opposite side of every pay-transaction. There is not only the duty of payment - there is, on the opposite side, a reciprocal duty of commodity performance, and this duty also is measured by units of use-value. The duty to deliver a bushel of wheat on contract is reciprocal to the duty to pay for the wheat. Here the legal unit of

¹ p. 164.

² Cf. Knapp, p. 4.

validity is the bushel, but the economic unit of value is the scarcity-value in industry of that bushel of wheat. By delivering the legal unit, a bushel, he is released from further duty of performance.

Hence it is that Knapp's "pay-community" is also a service community. On the "pay" side it enforces legal or customary means of payment. On the "service" side it enforces legal or customary means of service. The one is legal tender or customary tender; the other may be distinguished as legal performance or customary performance. The one releases the debtor from his obligation to pay; the other releases the producer from his obligation to deliver commodity or render service. Each substitutes liberty for duty and debt, according to the current rules of payment and performance. And if these reciprocal requirements work out successfully then the pay-and-service community is a going concern.

Here we arrive at the complete meaning of Knapp's "unit of value" as a unit of validity. It is, in reality, only a unit of weights and measures, abstracted completely from the things weighed and measured. Hence the "nominality" and "chartality" of his unit of validity. A "bushel" is also "nominal" in that our "service community" measures, by that unit, the amount of performance required in enforcing contracts. It is the lawful unit of performance which the community enforces, like every other unit of measurement. The dollar, too, is "nominal" in that the pay-community adopts it as a unit of measurement of the amount of payment to be required in enforcing contracts to pay, no matter whether it consists of gold, silver or paper.

This is the only meaning that can be given to Knapp's

"unit of value". It is the mere system of weights and measures abstracted from the things measured, and employed by the courts in order to apply the language of numbers to any kind of payment or performance. It is the unit of validity in enforcing payments or liberating litigants from their lawful duties of payment and performance. Units of measurement are, indeed, defined historically and not logically, for they are historical institutions developed from custom or law in order to make precise the administration of justice. All units of measurement are "nominal", just as language is nominal. Yet they have reality. Their reality is institutional and behavioristic, for they are used as guides to conduct, determining how much or how little shall be paid or performed.

This brings us to the economic significance of these units of validity. Their institutional significance is the enforcement of and liberation from the duties of payment and performance. Their economic significance turns on the two dimensions of value - a quantity of use-value measured by appropriate units of bushels, kilowat-hours, man-hours, etc., each unit of which has a scarcity value, its price, measured by the unit of scarcity value, the unit of money. Knapp's illustration of a "ticket" as a "sign" whose meaning must be found by consulting the law books, applies only to use-values, such as a warrant, a postage stamp, a bill of lading, et. And when he extends its meaning to "money" as a "ticket" the extension involves a metaphor, or false analogy, containing, in economic reality, two diverse and even contradictory economic meanings. If the analogy of a ticket is to be retained, then this contradiction requires a classification of two diverse and even contradictory meanings of "ticket", the one indicating a claim upon, or right against, another person

for the use-value of things or services; and the other indicating, not a claim, or right-duty relation, but a liberty-exposure relation of the relative scarcities of things and money upon a market.

The common law has evolved legal instruments corresponding to these two kinds of value. A claim upon another person for a thing with reference to its use-value is in law a bailment. It is the duty of the bailee, evidenced by a warehouse receipt or bill of lading, to deliver the thing, and with it, of course, its use-value unimpaired. But an offer to buy another thing with money has reference to its scarcity-value, and this, in law and economics, is a price, or exchange-value. If the latter, by analogy, is a "ticket", then it is a price-ticket, while the other is a commodity ticket.¹ The difference, of course, is fundamental, and the use of the analogy lies at the root of historical money fallacies and disasters, such as the theories of Law, Proudhon and Kellogg's Greenbackism, each of which compared paper money with a bailment.²

The essential economic difference is that the scarcity-value of the bailment, when sold as a claim to the thing, is always exactly equal to the scarcity-value, or price, of the thing, rising as it rises and falling as it falls. But the scarcity value of the price - "ticket" is separated from the scarcity-value of the thing and becomes a debt bought and sold in another market - the money market, or rather the debt market - a commercial or investment bank. Thus the commodity ticket (bailment), a sign of ownership of a thing, appears on the

¹ Commons, *Legal Foundations*, p. 254.

² On the distinction see Macleod, *1 Banking*, 309, 2:462, 474.

commodity market as the price of a commodity, say, wheat, but the price-ticket, as sign of a debt, appears upon the debt market, as the present discounted price of stocks, bonds, bills of exchange, promissory notes, etc., in terms of other debts payable on demand at a commercial bank.

Thus the price "ticket" has two aspects, the first of which has the legal relation of liberty-exposure upon either a commodity or a debt market; the second of which has the legal relation of right-duty, which is a debt payable on demand or time by a means of legal or customary payment, which is also another debt or price-ticket of the first form. In its first aspect the scarcity value of the price-ticket, or debt, is its "purchasing power", or means of exchange; in its second aspect its "institutional use value" as a means of liquidating debts, is its "releasing power", or means of payment. The first aspect - its scarcity value - we have above designated, from American usage, "intangible property". Its second aspect, the use value as releasing power, we have designated a debt or "incorporeal property".

Thus it is that Knapp's means of payment becomes also a means of purchase. The two are not distinguished by him, and he does not explain the grounds on which he identifies a means of purchasing commodities with a means of paying a debt. Yet, on analysis from the principles of the common law as historically worked out three centuries ago in the doctrine of "assumpsit", and now elaborated in the doctrine of "sales", a purchase of a commodity is itself a debt. If I physically receive a commodity from another person and become the owner of it, instead of a thief, burglar or hold-up man, the law assumes that I have agreed to pay for it at a current price in the current legal

tender, or its equivalent if acceptable to the previous owner, who is now assumed to be a seller instead of a victim.

So that the so-called purchase of a commodity, including a service, is in law a debt incurred by the so-called purchaser for the commodity or service acquired, and the only difference between a credit and a sale is the difference in the lapse of time between the point of physical delivery of the commodity and the point of legal payment and release from the debt. In a purchase "for cash", the payment of the debt occurs without appreciable lapse of time, but in the payment of a debt, in the usual meaning of debt, there is an appreciable and measurable lapse of time between the transfer of the commodity and the payment of the debt. Sale and purchase is as much credit and debt as is lending and borrowing, which in law, as Macleod insisted, is also a sale and purchase of negotiable instruments. But in a sale the debt is paid without appreciable lapse of time, while in a credit the debt is paid after an appreciable lapse of time. The time-differences may be distinguished as immediate payment, short-time payment and long-time payment of debts.

Hence Knapp, as well as Macleod, are correct in considering all transfers of ownership of commodities as the creation of debts, and therefore correct in making no distinction between "means of payment" and "means of purchase". There is no distinction either in practice, custom, or law when once a "pay community" takes the place of barter, and things are no longer merely physically exchanged without regard to ownership, as the physical economists really assumed, but the ownership of things is transferred in consideration of a means of debt-payment established and enforced by the pay-community.

It must be observed that Knapp's treatment of his problem turns on the distinction between legislation and administration. Legislation is what the State would do; administration is what it does. Of the Austrian State notes of 1866, evidently applicable also to the American greenbacks of 1862, he asks, "how these pieces stand in the eyes of the law. On their face they mad admit that they are debts, but in point of fact they are not so if the debts are not meant to be paid. In the case of paper money proper the State offers no other means of payment; therefore it is not an acknowledgment of the State's indebtedness, even if this is expressly stated. The statement is only a political good intention, and it is not actually true that the State will convert it into some other means of payment. The decisive factor is not what the State would do if it could, but what the State does. It is therefore a complete mistake to see no actual payment in payment by inconvertible paper money. It is a true payment, though it is not material¹. . . We keep most closely to the facts if we take as our test, that the money is accepted in payments made to the State's offices. . . On this basis it is not the issue, but the acceptation, as we call it, which is decisive."² To which we add, as above explained, acceptation by private persons as well as by State officers.

It is this distinction of legislation and administration that leads to his classification of means of payment as "genetic" and "functional". The genetic division gives account of their origin, and is two-fold, pensatory, that is, payment by weight, and proclamatory, that is, payment by legal ordinance. And it

¹ Ibid., 50, 51.

² p. 95.

is this distinction that gives rise to his idea of "nominality", for the same word, dollar or franc, or mark, is used in weighing or by proclamation, the former being specie, the latter law. But the functional division is administrative, and leads to the distinction between "valuta" and "accessory". Valuta money is that which is valid in itself, in that the administration and courts employ it as means of payment, and may be specie or paper; its essential quality is the actual legal tender in use for paying debts and taxes. Accessory money is that which is valid in relation to the full legal tender (valuta) and may also be metal or paper. Valuta money (legal tender) functions not as a commodity and is never purchased. It is simply the "last resort" of the administration and the courts in payments, whether outgoing or incoming. But accessory money is a commodity,¹ for it is purchased ultimately with legal tender money.

Thus Knapp gets beneath the popular notion of money and into the more fundamental legal notion. He substitutes negotiable institutions for physical commodities. The public man, he says, is by nature a "metallist". The banker, for example, says that he has received an increase in his supply of "money", and hence money is "easy", whereas what he has received is an increase in the supply of debts. These debts are means of payment and it is, not money, but debts that are "easy". "Wall Street" is said to be the center of the "money market", whereas it is the center of the debt market. Even economists speak of the "quantity of money", or the "quantity theory of money", whereas it is not a quantity of money but a quantity of debts, and this quantity of debts has somewhere an exactly equal quantity

of credits. The quantity of money is the quantity of debts, and the quantity of debts is the quantity of credits. The "real thing", the "reality", is not money - it is the present and expected repetition of debt transactions wherein the so-called "volume" of money is the "volume" of debts. Not a volume of things but a repetition of creditor and debtor transactions is the volume of money. The institutional reality of money is duty and debt, liberty and release from debt, by pay and service communities; its physical reality is commodities; its economic reality is scarcity, abundance and prices.

Knapp especially avoided this economic reality and all "economic reflections" on his legal problem. These reflections, suitable to his theory and that of Macleod, had been previously published by Sidgwick in 1883 and by Wicksell in 1898.

Hawtrey

Neither Macleod nor Knapp connected their legal concept of debt with the economic concept of a commodity, Knapp because he purposely avoided all "economic reflections," and Macleod because he mistook a debt for a commodity and so counted the same thing twice. It remained for Hawtrey, in 1919, to separate a debt from a commodity and thus tie the two together in a single functional relation.

Hawtrey begins by observing that the artificial things created by man, like money, teaspoons, umbrellas, are to be defined by the use or purpose which they serve, and are unlike the events and objects of nature, such as earthquakes and buttercups, wherein purpose does not enter into the definition.¹ The classical doctrine made the primary purposes of money two-fold, a medium of exchange and a measure of value, and gave as its historical origin an evolution out of a state of barter. But Hawtrey, like Macleod, makes the primary purpose of money the measurement of debts arising out of unequal transactions, and its derived purposes are the medium of exchange and the measure of value. Thus what he calls the "logical" distinguished from the "historical" origin of money is that of serving as a "money of account" for the settlement of balances between traders, and as such it may be carried in the head or on the books without physical existence.

Furthermore, there is a distinction between a debt and a promise to pay. A debt is "fundamentally an obligation to give not money but wealth." It arises out of the process of production itself, whereby

¹ Hawtrey, R. G. *Currency and Credit*, 1-16 (1919, 2nd ed. 1923).
See also his *Monetary Reconstruction and the Gold Standard*.

"a service rendered creates a debt from the person who acquires the product belongs to the person who renders the service." "Legally the use of money enables the debtor to close the transaction," or, as Knapp had said, to release the debtor from the obligation of his debt. But the debt itself is not economically paid until the creditor has gone into the market and drawn from it "so much wealth as is represented by the purchasing power he has received." Thus a debt is "wealth" owed to another and money is the means both of paying the debt and obtaining the wealth.

"Here is where the 'money of account' comes in. If, instead of receiving money from the debtor, he assigns away his right in the debt to some one else in exchange for the appropriate amount of wealth, he has taken a short cut to the same end." This assignment of a debt means that he is buying commodities from one class of people by means of debts owing him from other classes of people. But he could not do this continually unless all persons with whom he deals were also assigning to a middleman the debts owing to them. This middleman is the banker. And the bank credit which they receive in exchange from the banker is also merely a debt "differing from other debts only in the facilities allowed by the banker for transferring it to another creditor." They go to the banker, not for "money," but for "money of account," since he is the middleman who is keeping the accounts of indebtedness for the community, is setting off their debts against each other and is paying the balances by means of his own debts.

Thus we start our economic theory, not with Adam Smith's assumption of individual liberty to produce and acquire wealth, but with Hawtrey's assumption of a social duty to produce and deliver wealth. Although Hawtrey does not find it necessary to carry out the logical

and historical implications of his starting point, the difference between it and that of the classical economics is so great that we shall endeavor to bring out the contrast, doubtless not as he would do it, but as we conceive it to be logically and historically from his analysis.

With Adam Smith the liberty of the individual was not only "natural," by which he meant logical, it was also historically the fancied original state of the individual. But with Hawtrey the logical is distinguished from the historical. The fundamental logical state of the individual is that of an obligation to deliver wealth to the producers who have rendered to him the service of producing and delivering it to him. This obligation to deliver wealth is debt, and debt is the economic equivalent of which duty is the legal equivalent. Wealth, with Smith, was commodities freely produced for the use of others who are expected freely to produce other commodities for exchange. Wealth with Hawtrey is commodities that must be produced for the use of others who have already produced but have not been paid. One is individual liberty, the other is social obligation. In the one case there is no duty to produce wealth, and the status is the natural liberty of the individual. In the other case there is the duty to produce wealth, and the status is the legal institution of enforcing social obligation. With Smith there was a complete divorce of the theory of credit from the theory of production, for production creates only an exchange value, and credit has to be started on a different theory. But with Hawtrey the theory of production is at one and the same time, a theory of both production and credit, for production creates a debt on the part of him who acquires the product, and the equivalent credit in behalf of him who delivers the product.

While Hawtrey does not enter upon an historical investigation designed to discover whether his "logical" analysis of what is "fundamental" was also historically fundamental, whereas Smith assumed that what was logical was therefore historical, yet historical investigation, instead of romantic history, shows that his logical fundamental, Debt, is also historically the fundamental starting point of an economic history which is theoretical rather than descriptive. It needs only Knapp's distinction between unreleasable and releasable debts, and a consideration of such notable juristic inventions as assumpsit, negotiability, and legal tender, to bring about an economic theory which not only unifies production with credit but also unifies history with logic. This will appear by noticing the way in which Hawtrey logically connects his leading concepts of money of account, medium of exchange, and standard of value, and then observing the way in which this logic correlates with historical process.

Hawtrey starts his logical origin of money by the supposition of a "completely organized and civilized society, with all the modern developments of commerce and industry" and then examines "to what extent such a society might have existed just as it is without the use of money." He finds that such a society, not having a commodity which serves as money, will adopt a "money of account." Interestingly enough, modern anthropologists have actually found primitive societies which do have, for all transactions between members, exactly this money of account, but employing a commodity money for "foreign" trade with other communities (get citations). In other words, for their domestic trade, they create an economic equivalent of Knapp's pay-community and Hawtrey's money of account, so that Hawtrey's suppositious logic derived by abstraction from a modern credit society is

substantially a picture of what has been historically found in primitive societies, described by him as follows: "Goods are brought to market and exchanged. But even though there is no medium of exchange, it does not follow that they must be bartered directly for one another. If a man sells a ton of coals to another, this will create a debt from the buyer to the seller. But the buyer will have been himself a seller to some one else, and the seller will have been himself also a buyer. The dealers in the market can meet together and set off their debts and credits. But for this purpose the debts and credits which represent the purchase and sale of a variety of goods, must be reduced to some common measure. In fact a unit for the measurement of debts is indispensable. Where a commodity is used as money, it naturally supplies the unit for the measurement of debts. Where there is no money, the unit must be something wholly conventional and arbitrary. This is what is technically called a 'money of account.' Even when money is used, it may occasionally happen that the unit for the calculation of debts diverges in some degree from exact correspondence with the money in circulation. In that case the distinction between money and money of account immediately becomes a practical one. The value of the standard coin will be quoted in the money of account, and varying amounts of the standard coin will be needed to pay a given debt. This is an approximation to the state of affairs which we are assuming."

What, then, is the mechanism by which this money of account is stabilized, so that it will continue to be a uniform unit of measurement of debts from day to day, where there is no commodity nor legal tender used as money? A mechanism must take the place of a commodity. It is stabilized either by custom or by banks. In primitive communities, as we have noted, among the members of the community the account-

money may be stabilized by custom, whereas, in inter-tribal trade, commodity-money is used and is left to the forces of bargaining, supply and demand.

But in a modern community it is upon the bankers that is laid the burden of stabilizing the unit of the money of account, if there is no commodity-money and no legal-tender. The mechanism described by Hawtrey is not fanciful, he says, for it was the mechanism of the Bank of England during the fifteen years 1797 to 1812, when "the universal means of payment in England was the Bank of England note, which was not legal tender, and was merely the evidence of a debt due from the Bank, but a debt not payable in gold or any other medium."¹ It was merely a bank note, not different economically from a bank deposit, so that during that period commercial debts were paid, not in money nor even in a promise to pay money, but in the money of account managed by the Bank of England. It will thus be seen that Hawtrey's "money of account" is inconvertible paper money but without the legal tender quality attached, and the unit of this money of account was the "paper pound."²

The mechanism, without money or legal tender, is as follows. "The debts of the whole community can be settled by transfers in the banker's books, or by the delivery of documents, such as bank notes, representative of the banker's obligations. So long as the bankers remain solvent, their obligations supply a perfectly adequate means for the discharge of debts, because a debt can be just as well cancelled against another debt as extinguished by a payment of money.

¹ pp. 13, 14.

² cf. Cannan, Edwin, The Paper Pound of 1797-1921 (1919).

Of course, it is still true that if the banker himself is sued in a Court of Law, there is no legal tender in which he can be ordered to pay. But if he is solvent, he can obtain a credit from another banker. In fact, the natural test of the solvency of a private trader would be his power of obtaining sufficient bank credits to meet his liabilities, and the test of the solvency of a banker would be the ready convertibility of his obligations into the obligations of other bankers.¹

It will be noticed that the Federal Reserve System was created for the express purpose of furnishing this "money of account" to member banks in the form of a credit on the books of a Reserve bank at times when a banker might not be able readily to convert his own obligations into the obligations of other banks.

But here the question immediately arises, If we postulate a moneyless society, without either gold or legal tender, and then find that the bank credits of solvent banks fulfill the same purpose as money, have we not contradicted our postulate by bringing in money under another name? No, because we have brought in something that is both legally and economically different from money. "We are accustomed to think of bank credits as money. But this is only because for the practical purposes of every day the distinction between bank credits and money is rarely of any importance. . . A bank credit is merely a debt, differing from other debts only in the facilities allowed by the banker for transferring it to another creditor." Hence a bank credit is not money any more than the debt of any business man. It is just a debt. "No one imagines that a trade debt is money, though it may be as good an asset as a bank credit."²

¹ p. 4.

² pp. 4, 5. But see below on Purpose of Money.

Hence we get back to Hawtreys original supposition of a society without a commodity-money and without legal-tender, but with only a voluntary money of account, and to our original question of whether the mechanism of banking can, without the commodity-money or legal-tender, stabilize the unit of the money of account for the measurement of debts.

It turns out that a debt is the same quantity as a price, or rather, the function of a price is "to determine the magnitude of a debt." Hence the unit for measurement of debts is identical with the unit for the measurement of the prices which determine the magnitude of the debts. This is because a price is not looked upon by Hawtreys from the commodity point of view as the quantity of other goods obtained in exchange for a commodity, one of which goods is the commodity money, but price is looked upon from the transactional point of view as a legally recognized obligation created by the parties to a lawful transaction. It is the legal doctrine of "assumpsit." "When a price of any commodity is quoted in a market, this constitutes an offer, the acceptance of which creates a debt from the purchaser of the commodity to the vender. The function of the price is to determine the magnitude of the debt."

Thus Hawtreys supposition of a society without the commodity-

- 1 The definition of price arrived at by Fetter in his effort to get a consensus among economists is: "Price is the quantity of goods given or received in exchange for another good." 2 Amer. Econ. Rev. 783-813 (1912). Apparently Fetter, in this admirable investigation, did not find in the 117 definitions of price, as used by economists, any definition involving the legal significance of price, and this aspect therefore must be traced to the legal or institutional economists, Macleod, Knapp, and Hawtreys, whom Fetter did not include in his list.
- 2 Of course Hawtray is here speaking only of one dimension of the magnitude of a debt, the other dimension being the quantity of commodity offered and accepted - at that price.

money and without legal-tender, but with only a money of account for the settlement of the balance of debts is not merely a logical device for illustrating the difference between credit and money, it is also the "logic" of the historical situation which made it necessary for the courts, in interpreting and enforcing contracts, to have something more than an unstable money of account if economic security, distinguished from legal security, were to be obtained. How this necessity logically but not historically, develops is explained as follows.

Since the unit for the measurement of debts is the unit for the measurement of prices it is also "inevitably the unit for the measurement of values. The relative values of all commodities (in the economic sense of values) are measured by their relative prices. And the price of each commodity measures its value relative to the unit."

Here the term value is used in the economic sense of value-in-exchange. The price of a commodity is its value-in-exchange for money, that is, the amount of this money of account for which a unit of the commodity exchanges upon the market. "So long as value means value in exchange, the value of anything, whether it be a commodity or the monetary unit of account, must always be a proportion - a value in terms of something else. Just as every commodity has a value in terms of the unit, so the unit of account has a value in terms of each commodity. It may be the equivalent, say, of a pair of trousers, or a ton of coals."¹ Thus the "price" of a pair of trousers or a ton of coal, is, in the customary economic sense, the "value" of the trousers or coal.

Here it will be noted that value has the double meaning of value per unit which is price, and of the value of a volume of the commodity at the price. We shall distinguish these meanings as exchange-value and volume-value, from which a third meaning of value, the average-exchange-value, will be distinguished. This third meaning arises out of the fact that "the chief requirement of a unit of value is stability." Hence this third meaning of value is average-exchange-value, which Hawtrey explains as follows. "It is all very well to say that the value of the unit must not vary, but there is no single interpretation of the value of the unit. Its value in coals may be stable, while its value in trousers may rise or fall." The same, however, is just as true of a commodity gold as of the supposed unit of account. "It is enough to say that if we can point to a tendency for all prices of commodities, reckoned in the unit, to rise together, that means that the value of the unit is falling; and a tendency for all prices to fall means that the value of the unit is rising." That is, if the average of all exchange-values, which is the average of all prices, rises, then the value of the unit is falling, and inversely if the average falls, the value of the unit rises. This is as true of the unit of account, without money, as it is of the unit of money.

If, then, without money, but with only a unit of account for the payment of debt balances, will the mere fact of "continuity in the use of the unit from day to day be of itself sufficient to prevent its value in commodities varying in either direction unduly, even though it be unrestrained by equivalence to any specified commodity?"

To answer this, see how the credit mechanism works. "When a banker lends, we say that he grants or creates credit, or 'a credit.' This is a loose way of describing a double transaction." What happens

is that "two credits or debts are really created." One of them, the banker's debt, or "bank credit," payable on demand, is the property of the customer, owned by him as a "deposit," and used by him in the form of orders upon the banker to pay somebody else the amount of debt which the customer owes to that third party for commodities. The other debt, the customer's debt to the banker, "since it yields interest or discount for the period before it becomes due, supplies the banker's profit."

How much of this bank debt owed to the customer will the customer buy from the banker by creating his own debt payable to the banker? He is guided, in the first place, "by the then prevailing market prices," if he is a buyer of goods, and by the prevailing prices which he must pay for materials and labor, if he is a manufacturer. He will buy enough bank debt, by creating his own debt, as will be needed to pay these prior producers during the interval between the time when they produce the goods and the time when he will receive payment from a purchaser of the commodity on the markets. But this purchaser and all succeeding purchasers of the commodity at wholesale and retail will also have to buy bankers' debts, by creating their own debts, in order to make these payments, and so on until the ultimate consumer has paid.

But this ultimate consumer, on the other hand, is continually receiving his purchasing power out of these same credits which the customers of the bank are borrowing at the bank. Their supply of purchasing power is regulated by the amount of these bank credits, and is indeed actually paid to them in advance of the sale of their product by the very credit advances which bankers are making to the merchants and manufacturers. Although the ultimate consumers, such as wage earners, do not borrow at the bank, yet their employers do the

borrowing for them, and thereby are able to pay them for their work several months, and even years, before other ultimate consumers pay for the finished product.

Consequently all that is needed to finance the consumers' purchasing power at the prevailing market prices is the continuous creation every day by the banks of sufficient new credits to take the place of the older credits that their customers are continually paying to the banks every day by means of these same new credits that the banks are creating every day. It goes in a circle, an endless circle of buying customers' debts by creating bank debts and enabling the same customers afterwards to discharge these debts by creating an equal amount of new bank debts with which to buy customers' trade debts, and so on in the continuous circle of paying the prices for goods on the commodity markets by creating and canceling debts on the money markets. If this is done from day to day without a tendency of all prices to fall or rise together, then the principle of continuity is enough to maintain a stable value of the unit of money of account. "The routine of the credit machinery depends upon the new borrowing being on the whole sufficient and not more than sufficient to replace the advances paid off. Granted this, the stability of every other part of the machine follows."

But how about stability of value of the unit of account, with which we started. "Suppose this routine is interrupted. If we are to prove that the monetary unit will be a stable standard of value, we must show that if exposed to any disturbing cause the unit will tend to return to its former value, or, at any rate, that it will arrive at a new and relatively stable value not differing much from the old." On this point, consider first the disturbance caused by a curtailment of new borrowings, and then the disturbance caused by an

expansion of new borrowings.

The curtailment of borrowing may occur if merchants give fewer orders to manufacturers, or if borrowers reduce their indebtedness instead of spending their credits for commodities and labor. In the latter case consumers will purchase less commodities and, in either case, "a slackening in the creation of new credits means a diminution of orders to the manufacturers." This will spread in widening circles so that "the original restriction of credit will tend to repeat and reinforce itself."

But a corrective tendency soon begins to work. "The restriction of credit means a restriction of the bankers' business. The bankers will not willingly acquiesce in the consequent shrinkage of their profits, and they will try to tempt their customers to borrow. They will, in fact, reduce their charge for interest."¹

But it is not merely the bankers' willingness that reduces the rate of interest. It is also economic compulsion. "The curtailment of credit occasions a flagging of the demand for commodities. This flagging of demand will produce a fall of prices. The merchants will find that their stocks of goods lose value while they hold them, and this loss of value will diminish the profit out of which they pay interest on the loans with which these stocks are financed. Falling prices of themselves therefore make borrowing less attractive and reduce the rate of interest which borrowers are willing to pay. The bankers must reduce their charges of interest accordingly before they can induce their customers to continue borrowing on the diminished scale which their turnover of goods will justify, and, if these customers are to be tempted to increase their borrowing, the rate of interest must be reduced even below this low level."²

¹ p. 11.

² p. 11.

But if these measures do not encourage borrowing how far will the fall of prices go? The credit operations will not dwindle to nothing, because disappointed merchants will be driven to borrow on any terms, "merely to keep their business alive." Hence the old routine will revive but on a lower level of prices - that is, a higher value of the unit - and there is no "tendency for it automatically to return to its former value." It may continue to go still lower by a new disturbance which curtails new borrowings.

But take the contrary disturbance - something that causes an expansion of credit. "This movement is even more unlimited in scope. Self-interest prompts both the enterprising banker ever to lend more, for to each the increase in his credit operation means an increase in his business. . . The general rise of prices will involve a proportional increase of borrowing to finance a given output of goods, over and above the increase necessitated by the increase of output. . . Where will this process end? In the case of curtailment of credits the self-interest of the bankers and the distress of the merchants combined to restore the creation of credits, though not to its pre-existing level. But in the case of expansion of credits there is no such corrective influence at work. An indefinite expansion or inflation of credit seems to be in the immediate interest of merchants and bankers alike." Again, all standard of value of the money of account is completely lost.

Here is where money itself comes in. First, as a means for the legal discharge of debt by both the bankers and their customers. This is its primary purpose. "The bankers' obligation must be to pay money," because it is not of itself the legal means of discharging a debt.

Second as a medium of exchange, "because a purchase creates a debt, and money provides the means of paying the debt. When a debt is paid in ready money this merely means that the debt is immediately discharged." Thus a "medium of exchange" is, legally and economically, the creation and immediate discharge of a debt. It is discharged by voluntary acceptance if the medium is bank credit; compulsory acceptance if the medium is money.

Third, a standard of value. "The value of a debt immediately due is necessarily equal to the value of the means by which it can be legally paid. Thus the problem of stabilizing credit is identified with the problem of stabilizing the value of money."

Thus Hawtrey completes the economics of the legal problem started not only by Macleod and Knapp, but also by Marx and Proudhon. It turns on the meaning of Property and Price. With Marx and Proudhon the meaning of property was that of the classical and hedonic economists, namely, the exclusive holding of a physical object against all the world for one's own control. Macleod substituted the legal meaning of "incorporeal property," namely a debt owed by one person to another, but he treated this debt like a commodity because, by the legal invention of negotiability it could be bought and sold like a commodity. Hence, misled by a mere technical accident of the English common law, he made this debt a duplicate commodity, additional to the physical commodity whose security or sale created the debt, not observing that the commodity market and the debt market were only two aspects of the same market.

Then Knapp, by his concept of a pay community, developed the principles, not of a commodity market, but of a debt market. Finally Hawtrey, by carefully following each step in modern business trans-

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actions, on both the commodity markets and the debt markets, tied the two together by his two-fold aspect of Price, a price on the commodity market determining the magnitude of a debt on the money market. On the legal side, where Macleod had introduced only the legal device of negotiability, suitable to the transfer of ownership of a debt, Hawtrey added the legal doctrine of assumpsit, suitable to the creation of the debt itself. This doctrine, in its modern development, has become the basis of almost all transactions on all markets, and is in effect, the assumption that a mere offer and acceptance of a price on the commodity market creates a debt at that price, whose negotiability on the money market had attracted Macleod, and whose book-keeping in the office of a bank had attracted Knapp. Thus a debt instead of a commodity becomes the subject-matter of a science that would unite in one functional relation of mutual dependence the production of wealth, the relative scarcities of wealth and money and the laws of property. We shall consider the further development when we reach the analysis of a third type of property, the intangible property, other than debts, created by the expectations of buying and selling.

(below chapter on Willingness) Meanwhile we attend to the significance of Hawtrey's distinction between a science of human purpose and the physical sciences.

(Next, p. 71, Purpose of Money)

5. Purpose of Money

We have seen that, by combining Macleod's negotiability of debts and Knapp's pay community, the theory of money becomes an Institutional, distinguished from a Commodity theory. Its institutional character arises from the payment of debts and transfer of immediate and expected ownership of commodities. Both Macleod and Knapp departed from the beaten track of economic theory when they shifted their ground to legal theories of debt-payment. But Macleod did not get away from commodities, and only Knapp's pay communities, with their concept of concerted action instead of individual action, offer an institutional concept of money. The first economist, prior to Knapp, who, being adequately equipped in logic and ethics, attempted critically to revise Macleod's bizarre theories and to incorporate them, along with the then novel diminishing utility theory of Jevons, into an also critical revision of the physical theories, was Sidgwick, in 1883.¹

We begin with Sidgwick's definition of money. He faces the difficulty of defining a term "so fluctuating and uncertain" as money by criticising the objection raised by Jevons against attempting any definition at all. Jevons had said it was a "logical blunder" to suppose that, by "settling the meaning of a single word", we could avoid all the complex differences and various conditions of many things, requiring each its own definition". Jevons had referred to the contradictory objects which are or

1 Sidgwick, Henry, The Principles of Political Economy (1883, second edition 1887, "not altered on any point of fundamental importance"). Citations are to second edition.

may be called money, such as "bullion, standard coin, convertible and inconvertible notes, legal tender and not legal tender, cheques of various kinds, mercantile bills, exchequer bills, stock certificates, etc.", each of which "requires its own definition". But Sidgwick replied that Jevons' position is "paradoxical" in holding "that it is logically correct to give definitions of a number of species, but logically erroneous to try to define their common genus". These species themselves have the "same sort of difficulties, when one attempts to determine them precisely, as the wider notion 'money' does."

Then Sidgwick lays down an "essential and fundamental function of money", which shall serve him as the general principle or function of the genus. This fundamental function is one that will distinguish money from "goods", or "commodities", or "wealth", but shall permit more detailed definitions of the differences which distinguish one species of money from another. This general function of money is that of being "used in exchanges and other transfers of wealth where the object is to transfer not some particular commodity but command over commodities generally: it is as a medium of wealth-transfer that money is qualified for performing its other important function of measuring values."

Sidgwick, on the basis of this fundamental principle running through all the contradictory kinds of money, explains how it is that business men, bankers, and even so distinguished an economist as Bagehot, define money as metallic money or bank notes, but in most of their reasoning speak of it as

1 Ibid., 225-226.

"bankers' obligations to pay money on demand, not even embodied in bank notes". The reason is that "in ordinary times" a practical man is aware that "he can convert any portion of his bankers' liabilities into gold or notes¹ at will, and that he only leaves it in its immaterial condition for his own convenience. . . Hence he naturally comes to think and speak of all the 'money at his bank' as 'ready cash'. So Bagehot conceives England to have 'more ready cash' than any other country", whereas what she has is more bank debts payable on demand.

But, when it comes to a crisis and collapse of credit "the difference between bankers' liabilities and their means of meeting them becomes only too palpable. The same thing that he has just called 'cash' appears to him in its opposite character of 'credit'; and - again with Bagehot - he views England's 'cash in hand' as being 'so exceedingly small that a bystander almost trembles at its minuteness compared with the immensity of the credit that rests upon it'.²"

With this double meaning of money in view, Sidgwick decides to follow Macleod and adopt the term current in the money market, so as to denote by money the "whole" of the ordinary medium of exchange. He criticises Mill who had spoken "contemptuously" of Macleod's "extension of credit being talked of . . . as if credit were actually capital", whereas it is only "permission to use the capital of another person". Sidgwick observes that, in a certain sense the same is true of gold coin. "Its only function is to 'permit' or enable its owner to obtain and use other wealth and that it is only in this sense

1 Bank of England Notes.

2 Ibid., 223.

that Mills' statement is true of the credits or liabilities which a banker lends to his customers, whether in the form of notes, or under the rather misleading name of 'deposits'. This credit, no doubt, is a comparatively fragile and perishable instrument for transferring wealth; but that is no reason for ignoring the fact that, in a modern industrial community, it is the instrument mainly used for this important purpose.¹

Sidgwick thereupon expands Walker's definition of money to conform to Macleod's definition. Walker had defined money as "that which passes freely from hand to hand throughout the community in final discharge of debts and full payment for commodities."² Sidgwick changes Walker's term, "from hand to hand", making it read "from owner to owner", in order to include bank deposits as money, which Walker had excluded, although he had include bank notes. "It appears to be the difference between the two phrases which renders Mr. Walker unwilling to recognize deposits in banks as money; since they cannot 'pass from hand to hand', as notes do. But surely", continued Sidgwick, "when payment is made by notes (not being legal tender), the important fact is not the mere physical transmission of pieces of paper, but the transfer of claims on the banker; which is equally effected when payment is made by cheques."

Sidgwick then goes on to develop, as did Macleod, what may be distinguished as the technical legal purpose of

1 Ibid., 224.

2 Walker, Frances A., Money Trade and Industry, 4 (18?)

money rather than the physical, economic or ethical purpose of money. He does so, as is the practice of economists, under the name of the "functions" of money. But it must be observed that the word "function" is taken over from physics, physiology and mathematics, and carries a metaphor not suited to a science of the human will. The truly analogous term is Purpose. In speaking of "functions" no distinction is made between mechanism, organism and going concerns. Every so-called "function" in economics is a purpose, since it arises in the process of transactions between purposeful human beings. Consequently, instead of a "functional" economics, the economics of transactions and going concerns is a "purposeful economics". Wherever, in conformity with usage, or to introduce shades of meaning, we drop into the metaphorical term "function", or "functional", it is always to be understood to mean purpose or purposeful. This is important as we proceed to analyze Sidgwick's "functions" of money. His "essential and fundamental function" of money is the essential and fundamental purpose of those who in their transactions have need of money. By elipsis we speak of the purpose of money; without elipsis it is the purpose of those who use money. With this in mind we proceed to Sidgwick's "functions" of money.

His criticism of Walker shows that he had discarded the physical economist's notion of "exchange" and "circulation" as a physical delivery of commodities "from hand to hand", and had substituted Macleod's legal and institutional transfer "from owner to owner". The function of money, however, is even yet a technical function, rather than economic, and the shift from the physical "hand-to-hand" concept over to institutional

"owner-toowner" concept is a change from the physical technique of delivering commodities to the legal technique of negotiability, alienation and acquisition of the ownership of commodities. The further shift to another purposeful relationship is needed, namely, the purpose of participants, by utilizing the "means of exchange to determine upon and measure the scarcity values of commodities. While the physical and legal technique belong to the purpose of increasing the "efficiency" of goods and of legal procedure, the economic purpose belongs to the function of prices in determining and measuring the relative scarcities of goods and money.

Sidgwick's development of the legal technique of money, contrasted with Walker's physical technique, is significant in order to bring out by contrast his elimination of this economic purpose and to indicate his literal acceptance of Macleod's identification of notes and checks as a matter of merely the legal technique of transferring ownership. "No doubt", he says, "the receiver of the cheque might demand payment in notes: but similarly the receiver of notes might pay them in and have the sum added to his account. The former, again, might ask for payment in gold; but so equally might the latter. From neither point of view does there appear to be any essential distinction between the two. In saying this I do not mean to ignore the important practical difference that exists between payment by notes and payment by cheques.

Cheques do not circulate as notes do: the receiver of a cheque commonly pays it without delay and thus selects the banker whose liabilities he consents to take as money, whereas the receiver of a note usually exercises no such choice; so that the transfer of bankers' liabilities is more complicated in the former case than in the latter; since there is a change of bankers' as well as a

1 Ibid., 227n.

change of bankers' customers. But none the less is the essence of the transaction a transfer of bankers' obligations 'in final discharge of debts and full payment for commodities'. Accordingly a definition of money which includes bank notes generally and excludes the rest of bankers' liabilities is, I think, quite unacceptable."

In this respect, it will be seen, Sidgwick practically eliminates the physical metaphor of "circulation", and substitutes the reality of what actually happens, which turns out to be, when physical analogy is wholly abandoned, Knapp's concept of a "pay community". The modern bank check scarcely circulates at all. It is created, endorsed and deposited in payment either of debts previously negotiated, or in payment of new debts currently created at current prices by the transfer of ownership of commodities. The latter is usually considered a "purchase", but, as above shown, it is really the immediate payment of a debt newly created for commodities newly received. Yet the physical metaphor of "circulation", coming down from Quesnay and the period of metallic money, is the source of fallacies from which even Sidgwick did not wholly free himself, as will be noted shortly. Only recently, in America, has the reality of what actually happens been made available for scientific measurement, in the statistics now reported and published of "debts to individual accounts". These debts are a record of debt payments, including commodity purchases, by business men, and they are thereby a record of the transfer of bankers' liabilities from one creditor of the bank to another creditor. The term "circulation" is not applicable to this process, and is now, as it always was, a metaphor drawn from

the circulation of the blood or from an impossible physical analogy of water flowing down hill and goods flowing up hill. Instead of metaphor the reality is debits on the banker's books and credits on the merchant's, arising out of transfers of ownership, and this is none other than Knapp's organization of pay communities.

Knapp, as we have noted, had several classes of "pay communities", the principal of which were the State in the case of legal tender and the commercial banks in the case of notes and checks. There may be others, permanent or temporary or even occasional. The essential point is, not whether the instrument that is evidence of payment actually circulates, for "circulation" means only that the same instrument pays more than one debt, but the essential thing is that it pays at least one debt, or, what is the same thing, makes at least one purchase by transferring at least one title of ownership of commodities. Macleod himself, as we have seen, from whom Sidgwick derived this idea of debt payment, was burdened by the traditional physical analogies of circulation. A debt had to "circulate" in order to be money, and there is an analogy of circulation when a bill of exchange passes through as many as 150 endorsements, which he says had happened in Lancashire, but this, of course, is still a metaphor - the reality is that it paid 150 debts and was evidence in law of 150 transfers of ownership of commodities. Physical analogies are unavoidable but should not be misleading. It is not "circulation" or movement from "hand to hand" that is important in the definition of money - it is the volume of debt payments and the variety of debt instruments which are used to pay debts, including purchases.

Sidgwick discusses this aspect under the heading of the "finality" of different kinds of money in the discharge of debts. What is it that ultimately and finally releases debtors, including purchasers, from their obligations to pay? Sidgwick concludes that finality, in this sense, is a matter of degree, and that the "highest degree" of finality belongs to inconvertible notes of a modern government as an internal medium of exchange, through the two legal devices of acceptance at their nominal value in payment of taxes and other debts due to the public treasury, and of legal tender for the payment of private debts. This is even more "final" than gold. If gold, for example, is not legal tender, and if contracts to pay gold bullion in lieu of legal tender are conceivably not enforced in court, then gold might have a lower degree of finality in payment of debts than legal tender notes. Again, bank notes not legal-tender, says Sidgwick, have a still lower degree of finality, not different materially, however, from that of bank deposits. This lower finality than legal tender is owing to the fact that the banks may be called upon to discharge their own debts in legal tender. But this liability is balanced by opposite transactions by which the banker receives gold or notes in exchange for his own liabilities. So that "in ordinary times bankers' liabilities are accepted in final discharge of ordinary debts".¹

Evidently in these conclusions of Sidgwick regarding the degrees of finality of a means of payment in the discharge of debts, the term "finality" is used in a double sense which may be distinguished as negotiability and acceptability. If the instrument received is negotiable it relieves the one who accepts

1 Ibid., 227.

it from any liabilities or "equities" owed by the one who makes the payment, or by any preceding person who had used the instrument as a means of payment of debts or purchase of goods. Hence; if it is negotiable the recipient can, in turn, pass it on to others in final payment of debts and purchases. Consequently, all instruments strictly negotiable are equal in validity to legal tender money, since they are always promises or orders to pay that money, and are actually accepted by creditors and sellers, in ordinary times, in final payment of debts and purchasers.

But if an instrument is not fully negotiable, being merely assignable, then the payor can pass to the payee only so much of the total value as he actually owns, and the payee is liable for so much of the liabilities of the payor, or even of preceding payors, as may legally attach to the instrument.

But even though instruments may have the highest degree of negotiability, like bank notes, or bank checks, or legal tender money, so that they are equally acceptable from that standpoint, yet they may not have equal acceptability, on the part of payees, at all times. These different degrees of acceptability turn on several variable factors. First is the compulsion of courts in case of judicial awards. This is the highest degree of acceptability because the creditor is physically compelled to accept. There is no question here of the solvency of the debtor who issues the negotiable paper because he is the State and uses his physical power to compel acceptance and release the debtor. But, in the case of banks, acceptability turns on the expected solvency of the debtors, so that, although their demand liabilities are as highly negotiable as legal tender notes, and, "in ordinary times", are equally acceptable, yet at other times they may not be equally acceptable.

The lowest degree of acceptability is the promises of business men, which though equally negotiable with the others, are not as well known and therefore cannot be passed on as well in future payments. Yet these, too, may serve the technical requirements of negotiability, and therefore, from that standpoint, are equally a means of payment with the others, and they are actually accepted in final payment of debts. Even book credits, though not negotiable, are used to purchase commodities and to get full title to them. In these cases it is the will of the creditor or seller that accepts payment, uncoerced by courts of law, and the law accepts that acceptance as final, and transfers title to the commodity accordingly.

It is apparent, then, that if money is to be taken as the "whole" of money, then every species of debt, whether negotiable or non-negotiable, that is actually accepted, whether by compulsion of law or by custom or voluntary action, as a means of final payment for commodities, either immediately or after a lapse of time, must be looked upon as money. All of them do the work of money in that they are instruments for the release from debt. The distinction is not between the commodity, money and the commodity, goods or services, but between debts and goods; between an institution and a thing.

The foregoing has to do with the technique of the legal purpose of money. The "whole" of money is anything, not a commodity, that pays debts. The relations of the parts to the whole of money may be stated in economic terms of limiting and complementary factors. The different kinds of money serve this purpose of payment, but in different degrees of acceptability according to circumstances. At any time and place, for any person or class

of persons, one of these kinds may be a limiting factor and the others complementary. At a time of crisis the limiting factor may be the supply of legal tender, or of gold imports, or of clearing house certificates, and these rise relatively in value, whereas private bank notes or bank deposits are at that time complementary factors not as greatly valued under the circumstances. But in ordinary times, bank deposits may be the limiting factor, in which case it is really the discount policy of private banks, or of a central bank, that is the limiting factor, and the supply of gold or legal tender becomes a complementary factor not vividly important under the then circumstances. These limiting and complementary relations, are, in fact, different degrees of acceptability, and all kinds of money play their part, however great their differences either in kind of instrument or in Sidgwick's degree of negotiability. Each kind of money is a part of the whole legal mechanism of money, which consists in the technical attribute of immediate or deferred payment for commodities. They differ from commodities as release from debt differs from acquisition of things. They are not physical exchange of commodities - they are acquisition of, and payment for, commodities.

As soon, however, as we state the whole of the legal mechanism of release from debt in terms of limiting and complementary factors we have passed to the economic purpose of money in determining prices, distinguished from the technical legal purpose of paying debts and transferring ownership. These economic and legal purposes are, indeed, inseparable and each bears a functional relation to the other in the fact that the

issue of means of payment by a bank or government is inseparable from the quantity issued. Legally they release from debt; economically their supply is limited. Shall money be defined legally or economically, or both legally and economically? Sidgwick, following Macleod, defines it legally and not economically. But if the means of release from debt and the acquisition of commodities for which the debt itself was incurred are functionally dependent upon each other, then the "whole" of money must be so defined as to include this functionally related two-fold purpose. If not, then the limitation to merely the technical legal purpose leads to difficulties, three of which are illustrated in Sidgwick's doubts about the proper classification of inconvertible notes, merchants debts and stock market securities. We shall consider these separately.

The finality of inconvertible government notes as legal tender means of debt-payment, says Sidgwick, "is only attained at the cost of rendering them liable to depreciation from over-issue." On this account, "their inferiority to convertible notes is so palpable and so universally recognized that it would be practically very awkward to dignify "inconvertible legal tender by the title of money, and to refuse the title of money to convertible but not legal tender notes which have a lesser degree of legal finality."

Here, it will be noted, the meaning of finality is shifted from technical negotiability to economic acceptability, and therefore from the legal purpose of government in providing a means of payment to the economic purpose of government in "over-issuing" the means of payment. An "under-issue" might result in maintaining convertibility as when an arbitrary limit of

quantity is placed on accessory money, like silver, or on notes and coins of small denomination, or on full legal tender notes themselves.

The reconciliation of this legal and economic difficulty in defining money, so that it can be defined both legally and economically, is to be accomplished by Wieser's paradox of value, which is a way of stating the functional relation between limiting and complementary factors. The use-value of money is its technical legal qualities which serve as means of release from debt, but these are functionally inseparable from the scarcity-value of money as the relation between the total supply of means of release and the country's total demand for means of release, with the result that the value of the whole quantity of money changes according to changes in either the technical use-value or the economic scarcity-value. While the economic purpose of the governing authorities, and of bankers and merchants is functionally inseparable from the technical legal purpose of furnishing a means of payment, the one affecting scarcity value, the other affecting the use-value of money, yet they involve two entirely different principles, the technical legal principles outlined by Macleod and Knapp, and the economic principles to be determined by a different kind of experiment and experience.

A different treatment is accorded by Sidgwick to merchants' debts distinguished from bankers' debts. While he includes inconvertible government notes within his classification of kinds of money, since they have the "highest degree" of technical quality, even though they have economic inferiority and there-

fore inferior acceptability, yet he excludes from his definition this other kind of means of payment which also has economic effects, on the ground that it does not conform to his technical legal definition of money. His test here is "the manner" in which the functions of money are performed and not the economic consequences of the performance. If money does not perform in the technical manner of his definition, which here includes the physical analogy of circulation, then it is not money - it is a "substitute" for money. Thus he says, "If a private individual (A) obtains any valuable article from another (B) by promising to pay for it hereafter, and does pay for it, the credit he receives obviously does not operate as a substitute for money at all, in the long run - though it tends pro tanto to raise prices temporarily."

Here Sidgwick definitely excludes the economic functions of money from his definition of money. He goes on to state his standard for the definition to be the actual use of the legal function of negotiability. "Only if B (the seller of the commodity) uses A's debt (the merchant-purchaser) to him as a means of purchasing another commodity from C does this credit begin to be a substitute for money: if C uses it similarly in a similar transaction with D, its efficiency as a substitute is doubled. But it is not until such a debt has come to be taken without any idea of using it otherwise than as a means of payment that it has completely acquired the characteristics of money."¹

Thus a merchant's debt incurred by the purchase of commodities which, in law, transfers to the merchant full legal ownership

1 Ibid., 231.

of the commodity, is not money if the merchant pays his debt directly to the seller and the seller therefore does not sell the debt to a banker for a deposit credit or does not sell it to another merchant in purchase of goods. That is, it is not money if it does not "circulate". Such a transaction is similar to a book credit given by the seller to the buyer, which is not negotiable. And yet it has some effect on the price paid by the buyer for the commodity, making that price "temporarily" higher, undoubtedly because the buyer can, and usually does, pay a higher price if he can buy on credit, and the seller usually charges a higher price when he sells "on credit" than when he sells for "cash". In such case, although the effect is to raise the price, the transaction does not create even a "substitute" for money.

Evidently this exclusion of a merchant's book credit contradicts Sidgwick's inclusion of other debt instruments in his definition of money. In the first place, as Macleod points out, this book debt is as "final" a means of payment for the commodity purchased by the merchant as it would be if used by the seller to pay his own debts or purchase other commodities. Says Macleod, "When a merchant makes a purchase with his Credit. . . it is an absolute Sale: just as much as if the purchase had been effected with money. The Property in the goods is ceded to the merchant as fully and effectually as if he had paid for them in money."¹

Thus we can see that even a book credit, not negotiable in law, serves as a medium of transferring wealth, because it

changes the ownership of wealth. And, in economics, according to Sidgwick, it has the effect of raising prices "temporarily". Both in law and economics, therefore, a book credit is money, and if it is made negotiable as a trade acceptance, the only meaning is that it becomes a more efficient money - not that it is changed from no-money, or no-substitute for money, into the money-purpose of transferring ownership and modifying prices. This exclusion of merchants' debts, not actually sold by the seller of the commodity, from his technical legal purpose of money is merely a remnant from the traditional metaphor of "circulation" which he had criticised in the case of Walker. Book credits, indeed, do not "circulate", but they do transfer the ownership of goods. They transfer, indeed, only one ownership, whereas if they circulate they transfer several ownerships. But this single feature of circulation is not essential to the meaning - the essential thing is the legally recognized means of transferring ownership of commodities. The merchant's debt to the seller is, in law, full payment of the merchant's debt to the seller for the commodity purchased. It is this that has economic effects on prices, for it is, insofar, even though "temporarily", an increase in the buyer's ability to buy more goods at higher prices.

This exclusion of a merchant's non-negotiable book credit from the definition of even a "substitute" for money is, again, inconsistent with Sidgwick's inclusion of certain long-time securities as substitutes for money. He says, "There are certain widely accepted securities - the bonds of some governments, of some railways, etc. - which are so much more convenient for

transmission than bullion that they are frequently used as substitutes for bullion in the payment of international debts. When such securities have come to be bought and sold with a view to the fulfillment of this function, to deny that they possess pro tanto the most essential characteristic of money, would be to make ourselves the slaves of language."¹ To which may be added the economic purpose of reducing the demand for bullion which otherwise would increase the value of the whole of money.

It will be seen, in the foregoing, that there are as great difficulties in the way of classifying some debts as "substitutes" for money as there are in classifying others as "money". An author's meaning of "substitute for money" must always be the reciprocal of his meaning of "money". If money is only gold coin then every other means of payment and purchase is a substitute. If his meaning is final legal tender in payment of public and private debts, then even gold bullion is a "substitute for money". So Sidgwick's "substitutes" are a rather small list and he tries to reconcile the discrepancies by his concept of the higher and lower degrees of finality in payment of debts. But even so, his finality classification does not include everything that serves as final payment of debts. He disposes of these by calling them "substitutes" for money. They might equally well be called money of lower degrees of finality.

We submit that these difficulties of classification are avoided when money is looked upon as the whole mechanism of a pay community that furnishes the means of release from debt and

1 Ibid., 230.

purchase of commodities, the difference between the two latter being that a purchase is an immediate release from debt for the commodity and a "debt payment" is a deferred release from debt for the commodity. This whole mechanism of money is operated like any other going concern, except that it is the largest of all concerns and has the largest number of participants because it is world-wide and is set over against the transfers of ownership of all commodities in the markets of the world.

The whole mechanism, from this world point of view, is a World Pay Community, composed of interlocking minor pay communities, some of which are independent governments with their own schemes of legal tender; some are voluntary pay communities like commercial banks; some are central banks like the Bank of England or the Federal Reserve System; some are stock exchanges, produce exchanges and various types of markets. Some are only book credits of merchants. In fact, the whole going concern of the world's Pay Community is the expected repetition of transactions each of which creates a debt which must be paid immediately or after a short or long lapse of time. The means of payment are themselves debts, negotiable or non-negotiable, metallic or non-metallic legal tender, for the purpose of paying public and private debts and purchasing the legal control of commodities of all kinds. Like all going concerns, so the World Pay Community operates upon the principle of limiting and complementary factors, as respects both the different kinds of pay-instruments and the different concerns, governmental or private, which issue or produce in greater or lesser quantities the instruments of payment.

The limiting and complementary factors also include the functional interaction upon each other of four distinguishable kinds of purposes of money, as follows: - the technological or physical purpose of facilitating the production, transportation and delivery of commodities; the technical legal purpose of facilitating the transfer of legal control over the behavior of persons through the instrumentality of ownership of commodities and services; the economic purpose of facilitating the determination and measurement of prices of all kinds of property, whether the tangible property of commodities and services or the intangible property the various kinds of debts and expectations of profit; and the ethical purpose to be summarized as Reasonable Value.

First, as to the technological purpose of money. It always was inconsistent to call money and credit capital, or productive capital, as was done by the commodity economists, and as Macleod flagrantly did. It could be done only by a terrible mixing of ideas, or by metaphors, or by extending the meaning of productive capital so broadly that it would include everything that aids production, including the intellectual abilities and human moral character, which also were named Capital on similar grounds. The false analogy was promoted by the remarkable institution of negotiability of promises and such other expectations as shares in corporations. It is only when we clearly distinguish institutions, as the repetition of practices and transactions, speeded up by the legal inventions of negotiability, from commodities and capital as the embodiment of nature's forces, speeded up by technological invention, that a scientific ground

is afforded for the distinction of two different methods of increasing national efficiency. We have considered the second and third of these purposes, namely, the technical legal purpose and the economic purpose. The first mentioned, namely, the technological purpose of increasing the production of wealth, is evidently what Macleod meant when he spoke of Credit itself as productive Capital. What he means was that credit, by increasing the velocity of turnover of the sale and purchase of commodities, beyond what it would be with only metallic money, enormously increases the production of wealth. But the same is true also of metallic money compared with a primitive barter economy. This technical physical purpose of metallic money compared with barter, and of bank credit compared with metallic money, is greatly to increase the marketing velocity of turnover of commodities and this is, of course, a great increase in national efficiency. Macleod's illustrations are in point. In the ordinary course of business, he says, goods or commodities pass from grower or importer to manufacturer, then to wholesale dealer, then to retail dealer, then to the customer or consumer. If the grower or importer gets ready money from the wholesaler he can immediately produce or import a further supply in the room of those he has disposed of. In a similar way, if the wholesaler receives ready money from the retailer he might immediately make further purchases from the manufacturer and so immediately supply the place of the goods he has sold. Likewise with retailer and consumer. "If everybody had always ready money at command, the stream of circulation or production might go on uninterruptedly, as fast as consumption or demand might allow." This, however, is not the case. Few or no persons have always ready money at command for

what they require. . . If the stream of circulation, or production, were to stop until the Consumers had paid for the goods in money, it would be vastly diminished. . . But suppose the merchant has confidence in the wholesale dealer's character and integrity, he sells the goods to the wholesale dealer on Credit. . . That is, he sells the goods in exchange for a Credit or a debt, instead of for money. . . Hence Credit has caused exactly the same Circulation or Production as money does," provided it is negotiable the same as money. Hence, the next step is "to make the debts themselves saleable commodities: to sell them for ready money, or for other debts for more convenient amounts, and immediately exchangeable for money on Demand, and therefore equivalent to money." Otherwise the mass of merchants' debts are "so much dead stock." It is the bankers who buy their "dead stock" and, by giving "activity and circulation to it. . . convert it from dead stock into further Productive Power," and then the "whole mass of commercial debts is converted into Productive Capital."

Evidently the same may be said of money itself. It changes agriculture and industry from the slow process of barter to the rapid process of markets. Says Macleod, "Credit is Productive Capital exactly in the same way and in the same sense as money is."

But is it for this reason that money and credit should be named Capital or Productive Capital? They are not Capital in the sense of a machine that increases the output of labor. They are Capital in the sense of purchasing power on the markets, - not capital goods but Capital-value - not Turgot's "Capitals" but Turgot's "Capital" - not Productive Capital but Acquisitive

Capital. Of course this is the usual double meaning of Capital. Money and Credit are not Productive Capital, they are Institutions. Their technological purpose is that of augmenting the rate of turnover of productive capital. They are institutions created by the legal technique of negotiability, such that, by "circulating" rapidly, they enable producers and machinery to produce rapidly. It is mental, manual and managerial labor that is productive, and machines, which increase its efficiency are productive capital. But money and credit are Institutions which also increase efficiency but are not capital. It is again a metaphor to call them capital. They are practices or methods of behavior. As such, they speed up the rate at which labor produces wealth, by division of labor, by specialization, by possession of immediate purchasing power, by acquisition of machinery, by confidence in the future behavior of others, and so, by economizing the time of labor, they increase the rate of turnover of all producers taken together as a national or international going concern. In fact, it is a function of all institutions, from courts to weights, measures, money and credit, to increase the rate of production by increasing the confidence of all producers in the future behavior of one another. It happens that the institutions of money and credit are picked out by the legal technique of negotiability and payment of debts so that they may have rapid "circulation" through quick exchanges and price measurements. But they are Institutions, nevertheless, and not Capital, though by analogy and the inveterate materialism of the human mind, they pass as capital and wealth.

The fourth mentioned purpose of money is its ethical purpose. In ascertaining the ethical purpose of money, we are dealing

with a special case of the more general relation of economics to ethics, and this may begin with Sidgwick's distinction between the science of political economy and the art of political economy. It turns out that Sidgwick, following the English practice of the preceding thirty years, uses the word art with a double meaning when distinguishing it from science, namely the meaning of practice and the meaning of ethics. The aim of science, he says, is to "establish certain general propositions, either positively or hypothetically true, respecting the co-existence and sequence of facts."¹ But the aim of art, following the practice of the Mercantilists and English economists, is "to give practical rules for the attainment of certain ends." The other meaning of Art, included in but not distinguished from the first, is to determine whether these ends themselves are desirable or not. The distinction is between "what exists" and "what ought to be done", and Art is identified with both "what exists" and "what ought to be done."

This double meaning of art arose apparently from the doctrine of laissez-faire and centered on the question what "ought" or "ought not" to be done by government. Applied to the money problem the questions discussed under the heading of Art, by Sidgwick and others, were such as the desirability of government monopoly of coinage, protection against fraud and counterfeiting, should government bear the loss of wear and tear, should government stabilize the general purchasing power of money, should it adhere to bi-metallism or the gold standard, should government regulate the issues of bank-notes and bank credit, etc.

Evidently here are two questions included under the name of Art. The first is, Ought the thing to be done at all; and the

second, If it ought to be done, ought it to be done by government or by private associations? The latter is a practical question within the field of art considered as a system of rules for the attainment of certain ends. But the former question, whether the ends themselves are desirable or not, is not a question of Art - it should be distinguished as a question of Ethics. This double meaning of art is therefore Practices and Ethics. Practices are the instruments, but ethics is a valuation of the human ends to be attained through the instruments and practices. One is instrumental purpose, the other is ultimate purpose. It is to the expected repetition of practices that we give the name Institutions, and, if so, then Art and Institutions are identical.

Economics is undoubtedly a science of practices. The terms production, exchange, distribution and consumption indicate it. But is it also a science of Ethics? It certainly is not if the scientist injects his own opinion as to what is ultimately desirable and undesirable. Such is the case and the reason when Sidgwick reserves the problem of laissez faire for separate treatment, because he is there expressing his own opinion, partly as to what is ultimately desirable, and partly as to whether it should be done by government or by private associations.

But can ethical purpose itself be made the subject-matter of economic science? It depends on whether the subject-matter of economics is a part of an individual, such as his pains and pleasures, desires and dislikes, or is the whole of the individual as a participant in transactions, governed by the working rules of the various concerns in which he is a member or participant. Resolved into its elements, the word Art of political economy means exactly this. It means the activity

of individuals as participants and members of going concerns. And the practices which constitute Art in the field of economics are the economic transactions in which he is engaged with others. All are practicing the Art of political economy. And, since it is the expected repetition of these transactions, including managerial, bargaining and governmental, that constitutes custom and going concerns, then the concept of the whole individual must be large enough to include his participation, membership and subordination to custom and going concerns. This is his participation in the Art of political economy. This expected repetition of transactions, however, is again the meaning of Institutions, and with this definition of Art as practices, and with the definition of expected repetitive practices as Institutional, or rather, Volitional Economics, then art is the subject-matter of the science of economics, and must be treated "scientifically" the same as the theory of Value.

But the individual is in these transactions and concerns with a purpose, and all of them are there with their individual purposes. The transactions and concerns, including the expected activities of other persons, are the instruments for attaining his private ultimate purposes. It is out of the conflict of these ultimate purposes that Ethics arises; and economic ethics is nothing else than accumulated joint experience, projected into the future by precedents and custom, arrived at in the settlement of economic conflicts. Hence we have an objective ethics, and we may, by scientific investigation - without injecting private opinions - ascertain what these ethical purposes are.

Applying the inquiry to the institution of money, what does the accumulated experience of monetary transactions indicate to be, and to have been, the ethical purposes - not of money - but of those who invent and use means of paying debts?

Since these ethical, or ultimate human-interest purposes are connected with the technological, legal and economic purposes as the instruments, we find the ethical purposes simply in the diverse purposes in these several fields which brought about the conflicts of interest, provided the decisions or reconciliations of these conflicts continue to be, and are expected to continue to be, repeated with variability in the future. If so, we may generalize these ultimate as well as instrumental purposes, on the basis of what we find to be the way in which conflicts arise and are settled.

Judging by the eagerness with which all persons struggle to get money and by the advantageous position in which the possession of money places them, as well as by the legal decisions of disputes arising out of these struggles, the inference may be drawn that the highest ethical purpose of money is Liberty. Capitalism evolved from Feudalism by substituting wages and prices measured in money for direct service under the commands of landlords and overseers. Laborers escape from coercion by employers if they can be paid in money instead of truck or "living in" on the employer's premises. There are many decisions on these and similar issues. While money was denounced by Carlyle because it substituted a "cash nexus" for a "personal nexus", it was exactly this cash nexus which afforded the Liberty which Carlyle did not appreciate as much as he did the personal

nexus of a good employer who "organized" his laborers efficiently. But money is the most effective instrument for human liberty discovered by mankind, and, not necessarily the "love of money," but certainly the struggle to enjoy the institution of money, has been the most universal of all struggles for economic liberty.

Evidently, however, this struggle was fruitless without previously established institutions of unchangeable weights and measures. The stability of money weights was not firmly established in England until after the Revolution of 1689 which placed the merchant class superior in political power over the monarch and feudal classes. But stability of money weights is inseparable from stability of other measures according to which services and commodities are measured in exchange for money. We may say that the ethical purpose of measurements in all transactions is Security of expectations against arbitrary interference from superiors, and that Liberty and Security are inseparable from measurement. With these two ethical purposes of money as fundamental, other purposes are either a consequence, like the prosperity of Scotland, which Macleod attributed to bank notes; or are a further extension of the primary purposes, like the more recent efforts of the 19th and 20th centuries to obtain stability of the purchasing power of money in addition to the former stability of the weight of money; or are the further purpose of ascertaining Reasonable Values in transactions of willing buyers and sellers which is the economic problem of courts and the ethical summation of all the technical, legal and economic purposes of money.

With these several purposes in mind - technological,

technical, economic, and ethical - operating together as limiting and complementary factors in making up the whole purpose of the institution of money, money itself may be defined as any property right, other than ownership of commodities and services, which is developed historically out of the concerted action of pay communities, for the purpose of immediate or deferred release from debts incurred by acquiring ownership from others of commodities and services, at scarcity values computed as prices in community-accepted units of measurement, conformably to the custom of dominant persons in control of the pay-community and in pursuance of what they deem to be Liberty, Security and Reasonable Value for themselves and others.

6. Profits and Interest

This world mechanism of money is operated originally by managerial participants for the private purpose of obtaining profits on transactions and interest on investments, but eventually also for the public purpose of national welfare, as previously shown in the case of the Bank of England. We first distinguish the private purposes of profit and interest, and afterwards, in the chapter on Reasonableness, the public purposes.

We have seen that Macleod, writing after commercial banks were furnishing the bulk of the means of payment, did not distinguish Interest from Profit, but that Turgot, in a period of metallic money without commercial banks, clearly made the distinction. Money had now become a banking institution, not a commodity. The rate of Interest, with Turgot, before the existence of banking institutions conducted for profit, was a price paid for the use of a certain quantity of value for a period of time, and not a profit for bankers. This Value was Capital and capital was the exchange-value of metallic money with which the borrower paid for Capitals - these being the commodities used in production. The rate of interest, being a price paid for the use of Value, was subject to the principles of demand and supply, and therefore was an index of the general margin of production in manufactures and agriculture. As the rate of interest fell, manufactures and agriculture were extended to lower margins with a higher rate of productivity. So that, on the one side, the demand for Capital - a quantity of exchange value - was limited by the amount of marginal product, and, on

the other side, it was limited by the quantity of that purchasing power, Capital, supplied by those who wished to obtain interest in the future rather than commodities for consumption in the present.

On analysis, we found that this rate of interest was equivalent to the modern concept of bond-yield and stock-yield on good securities, corresponding to Turgot's illustration of rent-yield from a landed estate. There was here a clear distinction made by Turgot between interest and profit, the latter being the surplus which the tenant or the manufacturer was able to obtain, over and above the interest or rent paid to lender or landowner.

Macleod, on the contrary, seeing that the "manufacture" of bankers' debts as a new kind of commodity had taken the place of metallic money, made no distinction between the operations of a banker in selling his own demand debts at a profit and the operations of a merchant in selling his commodities at a profit. Discount and interest were identical, except as to the method and time of computation, and there was no difference between a banker's profit derived from waiting over a lapse of time and a merchant's profit derived from buying at a low price and selling at a higher price. This, it will be seen, was precisely the theory of the physical economists, for whom the future lapse of time had no effect on prices, and all was explained by the supply and demand for commodities, including the commodity, money.

The first economist to bring into a functional relation of interdependence Turgot's investment theory of interest and

Macleod's commodity theory of profit was Sidgwick, in 1883. He did it by accepting, on the one hand, Macleod's idea of the manufacture of credit for a profit, and, on the other hand, Turgot's idea of a price paid for the use of purchasing power during a period time. Both were capital in the sense of value in exchange for commodities. In both cases the lender - or rather the seller of purchasing power - received a price for the use of his purchasing power. The banker and investor each sold the same kind of instrument - a negotiable debt - having the same general purchasing power, but the banker sold it to borrowers for the sake of a present profit while the investor sold it to them for the sake of future interest. Hence there were two variable rates of interest, instead of one, each having an effect upon the other, but separable for functional analysis. One rate was dominated by the expectation of profit, the other by the expectation of interest.

The one dominated by the hope of profit followed Macleod's theory of bank credit. "Loans made for short periods," said Sidgwick, "by professional lenders of money must yield the latter some 'wages of management' as well as strict interest; on this ground, therefore, we might expect the rate of discount on bills of exchange to be higher than the rate of interest on capital generally. On the other hand, we have to consider that the banker to a great extent produces the money he lends, viz. his own obligations, which so long as his business flourishes he is practically never compelled to redeem;¹ and that he may easily afford to sell the use of this money at a price

1 "That is, the amount he is continually called upon to redeem is balanced by the amount that he is able to lend afresh."

materially less than the rate of interest on capital generally. Hence so far as he increases the extent and security of his business by lending his money chiefly to traders for short periods, competition may force him to make such loans at a rate not above - or even below - that of ordinary interest on capital permanently, though not less safely invested; and this seems to be actually the case; partly, perhaps, because traders are specially important customers of banks; but chiefly because it is convenient for bankers to lend money which the borrowers are bound to repay after definite short intervals, in order that they may at any time reduce easily the amount they have out on loan, if exceptionally large payments are required of them. Thus we have no ground for saying a priori that the rate of discount charged by bankers on mercantile bills will be - even on the average and after all allowance for differences of risk - the same as the rate of interest on capital generally; there is no economic reason why it should not be more than this, since the banker has to be remunerated for his trouble: and on the other hand there is no reason why it should not be materially less, if the value of the advantages above-mentioned is considerable; since a comparatively low rate of interest on the medium of exchange inexpensively produced by the banker himself would be sufficient to give him normal profit on his banking capital."

This rate of interest received by bankers Sidgwick distinguishes as "value of the use of money," but the rate of interest received by those who are not "professional dealers in

1 Sidgwick, Pol. Econ. 245, 246.

money", that is who are investors, is "a price paid for the use of savings,"¹ or its equivalent, "the price obtained by the owner for the use of his capital,"² capital being defined as purchasing power. While considerable amounts of capital - in the sense of purchasing power - are provided by manufacturers out of their profits and without borrowing, yet the interest received on this may be considered equal to that on borrowed capital. If so, then all capital may be considered to be estimated at its exchange value in money.

Furthermore, according to Sidgwick, this amount of capital, in the sense of purchasing power, is not the amount originally invested, which is the same as the original cost of constructing the physical instruments, but is the present value of the capital. This present value therefore includes mainly three types of present value, the value of land, the value of bonds, public and private, and the value of shares in corporations. These capital values may include an element of risk, especially in the case of common stock, but, on the whole, taking the average of all, these risks offset each other, so that interest proper is the proportion between the average of current rates of land rents, bond interest and stock dividends, on the one hand, and the present market value of land, stocks and bonds. If the current rate of interest falls from 3 to 2 per cent the price of land³ and of these securities, ceteris paribus, rises 50%. The annual proportion between interest and capital has changed

1 Sidgwick, Pol. Econ. 256.

2 Ibid., 264.

3 Ibid., 259.

from 1 to 33 per year to 1 to 50 per year, so that whether we say interest has fallen 33%, or capital has risen 50%, we are saying the same thing. In other words, this rise in capital-value is not in itself an increase in community wealth - it is merely, in itself, a re-distribution of wealth.

Thus Sidgwick extends to stocks and bonds the principle which Turgot applied to land, but points out that capital thus defined is not capital "from the point of view of the community," because this "rise obviously does not constitute a real increase of wealth: since the command over the necessities and conveniences of life possessed by the community is, speaking broadly, no greater because the exchange value of its instruments of production has risen in consequence of a fall in the rate of interest. But from the individual's point of view the increase of wealth is, in a certain sense, real and not merely nominal; for though the real income of the owner of the capital is not increased by the change, his power of purchasing consumable commodities has certainly increased, though he can only exercise it by spending his capital."¹

On the other hand, Sidgwick, by making a detailed analysis of Turgot's concept of a diminishing field of employment, but qualifying Turgot by introducing a counterforce, Invention, which offers an increasing field of employment, indicated that a declining rate of interest does, as Turgot had held, lead to a community-increase in real wealth. Sidgwick apparently was not acquainted with Turgot, and in this respect he re-discovered Turgot's principle, and thus enlarged upon Ricardo who saw the principle of diminishing returns only in agriculture and did

1 Ibid., 259.

not develop the effects of falling and rising rates of interest on manufactures and commerce, as well as agriculture.

Thus Sidgwick's distinction between interest on capital and profit of bankers enabled him to criticise John Stuart Mill and other economists, who, until that time, had not distinguished the commercial interest-rate from the investment interest rate. Instead of distinguishing them as functionally different, Mill and the others had averaged them. Mill had "definitely and deliberately identified the "value of the use of money", that is, the commercial rate, with the "value of the use of capital", that, the investment rate of interest, which latter Sidgwick now identified with the rate of yield on the capital value of land, stocks and bonds. The principles underlying the two rates were widely different. One was Profit, the other was Interest. One had to do with prices of Commodities, the other with prices of Securities.

Sidgwick did not carry his distinction to any constructive proposals, as Macleod had done with his discount rate of the Bank of England, and did not work out any functional interaction of the two rates upon each other. His work was mainly the critical analysis of ambiguous meanings of words which he doubtless carried further than any English economist. It remained for Knut Wicksell, the Swedish economist, in 1898, to develop this abstract distinction between the two rates of interest into a functional relation between the two, and to construct, upon the distinction, an hypothetical going concern of the future, a World Pay Community.

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CHAPTER XI

A World Pay Community

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CHAPTER XI

A World Pay Community

Knut Wicksell,¹ the Swedish economist, occupies a transitional position between the individualistic, physical and hedonic theories and the more recent theories of price economies and concerted action. So important is his position that we may well use his theories to trace the process of transition from the older to the new. The influence of the older theories remained in his identification of "natural" interest with both marginal productivity and underestimate of the future, and the modern theories appear in the threefold functional relation which he set up between this natural interest; the movement of commodity prices and a world-wide concerted action of banks of issue in controlling the bank rates of discount. If the bank rate is reduced, by concerted action, below the natural rate then the business customers of the banks are induced to increase their demand for bank credit with which they thereby increase their demand for commodities, with the result that the prices of commodities tend to rise. The opposite occurs if the bank rate, by concerted action, is raised above the marginal productivity of capital. The bank customers then reduce their demand for bank credit, thus reducing their demand for commodities, and the prices of commodities tend to fall. But if the bank rate, by the same world-wide concerted action, is equalized with the marginal productivity of capital then the average of commodity prices tends towards stability.

¹ Wicksell, Knut, Geldzins und Güterpreise (1898).

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Thus Wicksell conceived a three-fold functional interaction, on a world-wide scale, of changes in technological productivity, concerted changes in bank rates of discount, and change in the average of commodity prices. The magnificent sweep of imagination in this doctrine of relativity, of change, and of world-wide concerted action, marks, indeed, the unnoticed beginning, thirty years ago, of a wholly new and volitional, or managerial, theory of political economy, whose experimental and statistical tests awaited the revolutionary upheaval and slump of prices that accompanied and followed the World War. Not until after that catastrophe did Wicksell's theory begin to excite discussion and it came forward in the tentative proposals of the Geneva Conference of 1922, and in the partial experiments of the Federal Reserve System cooperating more or less with the Central Banks of Europe.

Wicksell builded mainly upon the theories of Thomas Tooke, going back to the decade of the 1820's, and upon the theories of Stanley Jevons, Sidgwick and Bohm-Bawerk, and so novel are his theories, contrasted with those of the Ricardian and hedonic economists, that each one of his concepts must be separately examined and contrasted. These concepts are the marginal productivity of the Ricardian School and its reappearance as Bohm-Bawerk's "technical superiority of present goods;" Tooke's substitution of the discount rate for Ricardo's "quantity theory" of money, also partly anticipated by MacLeod; Jevons' concept of invested and free capital, in place of the older fixed and circulating capital; Bohm-Bawerk's "underestimate of the future;" and his own concept of the relativity of different rates of interest, first anticipated by Sidgwick, but given a functional significance in Wicksell's concept of concerted action of the world's central banks.

CHAPTER I. THE DISCOVERY OF AMERICA. — The first discovery of America was made by Christopher Columbus in 1492. He was an Italian explorer who sailed for Spain. He discovered the New World on October 12, 1492. He named the islands he discovered "San Salvador" and "Juana." He was the first European to reach the Americas. He was followed by other explorers, such as Vasco Nunez de Balboa, who discovered the Pacific Ocean, and Hernan Cortes, who discovered the Aztec Empire. The discovery of America led to the colonization of the continent by European powers. The first European colony in America was established by the Spanish in 1493. The first English colony was established in 1607. The first French colony was established in 1608. The first Dutch colony was established in 1614. The first Swedish colony was established in 1639. The first Danish colony was established in 1671. The first German colony was established in 1683. The first Russian colony was established in 1784. The first American colony was established in 1776.

CHAPTER II.

THE DISCOVERY OF AMERICA. — The first discovery of America was made by Christopher Columbus in 1492.

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forth the economists' concept of social capital and interest as against the concepts of private capital and interest. It was upon this concept that Wicksell builded. This requires us to distinguish the social point of view which applies to all theories of marginal productivity, natural interest, and bond yield, and especially to Wicksell's concept of world-wide concerted changes in the bank rates of discount.

All economists take the social point of view, whether they be individualists, communists, capitalists or otherwise. This requires them to get behind the immediate private transactions of buying, borrowing, etc., and behind the institutions of money, custom and law, in order to set forth the social-economic realities. The most important social reality towards which all social production is directed is consumption goods. But these same consumption goods are also the necessary conditions of subsistence on which the population is able to produce consumption goods. Consumption goods are the beginning and ending of the social process. It is these that constitute real wages, real profits, real interest, real rent, distinguished from the nominal, or money wages, profits, interest and rent. Real wages, profits, interest and rent are incomes of consumption goods, as against the nominal incomes of money, and as against the deferred real incomes expected by means of ownership of land, machinery and all other means of acquisition.

It was upon this social concept of consumption goods that Ricardo and Marx, afterwards Jevons and Wicksell, constructed their concepts of social, or real, or natural capital and social or real or natural wages, profit, rent and interest. All money costs and money income, all fixed and circulating capital, all exchanges of goods for goods, since they were intermediate and instrumental, were reduced to their equivalent social quantity of consumption goods.

It is evident that, if quantities of consumption goods are thus to be compared with each other and with quantities of intermediate goods owned, such as fixed and circulating capital, there must be devised a uniform system of measurement by means of which quantities can be compared. Such comparison cannot be made with the diverse physical units of yards, acres, tons, bushels, kilowatts, etc. Neither can comparisons of quantities be made with so fluctuating a unit of measurement as money, unless, by imagination, the purchasing power of money is supposed to remain constant. This was Wicksell's device. It is the economist's method of virtual elimination, which Wicksell necessarily adopted in arriving at a social point of view, to be distinguished from the method of actual elimination practiced in the laboratories of the physical sciences. It consists in eliminating, by imagination, all the changeable factors deemed irrelevant by supposing them to remain constant, while the factor under investigation is supposed to be the only one whose magnitude is variable.

This method of virtual elimination is indeed the reason why economic theory gives a sense of unreality and aloofness from the practical affairs which deal only with sense observations, but the method is, after all, only an extension of all common sense, which reasons by eliminating what, for the purpose in hand, are deemed to be irrelevant facts. The danger and the aloofness of this method of reasoning is that, after this imaginary elimination, the factors eliminated are not restored in their functional relationships.

The purpose of elimination in this case is in the effort to distinguish between a social and a private point of view. The social viewpoint is the quantities of consumption goods produced and consumed. The private point of view is the prices paid. In order to isolate the quantities and thus to measure their variations the prices must be

eliminated by imagining them, on the average, to be constant. Afterwards the nearer approach to reality can be made, as Wicksell did, by introducing the changes in prices.

This stability of the average purchasing power of money was accomplished, in theory, by Ricardo and Marx on the assumption that money was metallic money, and therefore was a circulating commodity, like wheat or cloth. As such, its quantity could be reduced to the same unit of measurement as that which measured the quantities of other commodities, namely the man-hour cost of production. Hence they substituted the average man-hour of labor as the uniform system of measurement to which all commodities, whether consumption goods, raw materials, machinery, buildings, could be reduced and measured. The average number of man-hours embodied in the production of any commodity measured the quantity of that commodity, and therefore in any exchange of one commodity for another, including money, the commodities might be considered to exchange in the inverse ratio of the man-hours embodied in each, so that, on the average, the exchange values tended toward the exchange of equal numbers of man-hours.

We have noted that with Ricardo and Marx the man-hour system of measurement was nothing more than a personification of the natural scarcity of goods, to which they gave the name "value" when speaking of each commodity by itself, and the name exchange-value when speaking of the exchange of one commodity for another in the inverse ratio of the man-hours embodied in each. We may preserve this metaphor by naming their concept of value the man-hour-price, and their exchange-value the relative man-hour price. Their exchange-value, then, or man-hour-price, was the "natural price" or "normal price" toward which all commodities tended, including the commodity money.

But Wicksell was dealing with a situation where money was mainly bank credit, a debt instead of a commodity, and without a labor cost of production. Moreover he had before him the index numbers of several authorities showing a remarkable coincidence, in different countries, of the average change in the purchasing power of money.¹ In order, then, to obtain the concept of a stable unit of money for the comparison of all economic quantities he needed only to suppose a stable average of prices. Thus he obtained a stable unit for the measurement of the quantities of all commodities.

We are now in position to distinguish the three meanings of social capital and social interest according to Ricardo, Marx, and Jevons, and its rendering by Wicksell under the names of natural capital and natural interest. The dimensions of these economic quantities, with Ricardo, turned on the theory of marginal productivity. This theory was based on three factors, the man-hour system of measurement, the Malthusian pressure of population and a minimum of consumption commodities for labor. The pressure of population drove the production of these commodities down to lower levels of yield per man-hour. But labor's need of subsistence is fixed at a minimum, and labor, therefore, must needs obtain a larger share of the gross output of consumption goods as man-hour productivity diminishes, leaving a smaller share for profits and interest. Thus marginal productivity is a concept of a social net income - the gross income being the total output of consumption goods; the gross outgo being the quantity of consumption goods furnished to laborers, and the ~~net~~ social income for profits, interest and rent being determined by the difference between the gross output and the gross outgo for labor, all of them measured by man-hours.

1 Wicksell, *ibid.*, 158, references to the index numbers of Soetbeer, Heintz, Conrad, Sauerbeck, and Fisher.

To this computation Marx added the enlargement of net income for profits and interest by machinery and by compelling the laborers to work longer hours for the same quantity of goods. But this did not change the concept of net social income derived from marginal productivity, or as Marx now put it, average productivity, which revealed itself, in the Marxian version, as the amount of consumption commodities. The gross output, measured by man-hours varied in the downward direction by diminishing returns in agriculture, and in the upward direction by improvements in machinery. The gross income for laborers was fixed at the minimum quantity of necessities, and hence required more man-hours to produce it if productivity was diminishing, and less man-hours if productivity was increasing by the introduction of machinery and longer hours of work. The net income of profit, interest and rent was this variable difference between the man-hour dimension of gross output and gross outgo for labor.

Thus the social cost of production was the quantity of consumption goods destined for laborers, measured by the number of man-hours required to produce it. This was Ricardo's "capital." It was simple enough if only consumption goods were produced. The difficulty arose in measuring the quantity of fixed, capital, especially machinery. Three methods of measuring this quantity of fixed capital were developed, the methods of Ricardo, Marx, and Jevons.

Ricardo did not attempt to measure the quantity of fixed capital. He measured only its effects. He interpreted machinery to mean only an increase in the productivity of labor, and, just as differences in fertility of the soil caused differences in the productivity of labor, so differences in machinery caused differences in the productivity of labor. Machinery was not social capital - capital was consumption goods purchased by laborers. Machinery increased the

productivity of labor, and thus machinery was measured, not by its quantity, but by its effects in enlarging the man-hour quantity of output of consumption goods relative to the man-hour quantity of consumption goods used by laborers in the process.

But Marx measured the quantity of machinery itself by the man-hour quantity of consumption goods required by laborers during the time they were producing the machinery, or, as we should say, by reducing fixed capital, quantitatively, to the total man-hour-prices of all the consumption goods paid to labor for the construction and maintenance of the fixed capital. These man-hour-prices became the total man-hour value which reappears partly in the consumption goods paid to laborers. But the employer compelled the workers to work longer hours for nothing, so that the value of the total consumption goods produced and measured by man-hours was greater than the value of that part of it paid to the laborers. Thus, by his method also, as with Ricardo's, the consumption goods used by laborers, measured by man-hours, became the capitalist's cost of production.

But here their definitions of capital diverged. Ricardo's "capital" was the cost of production in terms of the man-hour quantity of consumption goods paid to laborers, while profits and interest were the net income between this quantity of outgo and the larger quantity of output of consumption goods. Marx reversed this. His quantity of "capital" was the total man-hour output itself of consumption goods belonging to the capitalist, while profits, interest and rent were the net income derived by deducting, from this total quantity, the man-hour quantity of consumption goods paid to laborers. Thus, Marx's "capital" was the total "output" of consumption goods; Ricardo's capital was the "input" of labor's consumption goods, each measured by man-hours. We shall find these opposite meanings of capital appearing

again, but in terms of money - Ricardo's meaning appearing as Invested Capital at the hands of Jevons and Wicksell, Marx's meaning appearing as Capitalization of expected net income at the hands of Veblen, Fetter, Fisher and the stock market.

Jevons' method of measuring the quantity of machinery and fixed capital was the third method referred to. He, as pointed out by Wicksell, proposed to displace the classical economists' inelastic concepts of physically "fixed" and "circulating" capital by the elastic concepts of "free" and "invested" capital.

Free, or uninvested capital, according to Jevons, should not be defined to include all of the miscellaneous circulating capital which the economists had included, such as raw materials, consumption goods, inventories, money, wherein the economists were misled by the physical analogies of anything physically movable, but should include only the quantity of consumption goods purchased by laborers with their money wages. These money wages, from the private standpoint, were the employers' "investment," but the quantity of consumption goods purchased therewith was the real wages, the social cost of production.

It will be noted, however, that Jevons' concept of free and invested capital did not really differ from the physical economists' notion of fixed and circulating capital except in the unit of measurement. Ricardo and Marx employed the man-hour unit of measurement; Jevons employed the money unit. They resolved fixed and circulating capital, including consumption commodities, quantitatively into the number of man-hours required to produce it. Jevons resolved it into the number of dollars required to pay the laborers to produce it. But, in either case, from a social point of view, money must be eliminated

1 Wicksell, ibid., 117 ff.

and the social cost of production therefore becomes, in either case, the quantity of consumption goods purchased by laborers. This quantity must, of course, be measured by the same unit as that which measures the quantity of fixed, circulating, or invested capital, as well as that which measures the quantity of output of consumption goods. Ricardo and Marx measured all of these quantities by man-hours, but Jevons measured them by money.

Thus we have three historical meanings of social capital in terms of consumption goods, and two methods of measurement. The Ricardian meaning was the social cost of production, that is, the total "input" of all the goods consumed by laborers, measured by the hours of labor required to produce it, but not including the consumption goods used by those who received rents, interest and profits. These were shares of the net output of consumption goods above labor's minimum "input," determined by marginal productivity.

The Marxian meaning of capital was the total social output of all consumption goods measured by man-hours, which, by the institution of property, belonged to the capitalists. From this total output labor's minimum was deducted, and there remained the total "surplus," or net income, measured by man-hours, and distributed among the capitalists by the Ricardian process of rent and profit.

Finally, the Jevons method followed that of Ricardo, but with money instead of man-hours. Social capital remained, as with Ricardo, the total quantity of consumption goods purchased by means of money wages and there remained for the capitalist only his "investment" equal to these money wages, but having no tangible existence, for it was only an intangible claim on the future for such a quantity of money as might be derived from the future sale of consumption goods.

These three concepts of social capital and interest may be illustrated by the supposition that all industries are fully "integrated," all the way from the primary producer, the laborer, to the ultimate consumer, and that all are owned and managed by separate groups of capitalists. Along this process, in each integrated industry, the fixed and circulating capital goods do not appear as commodities bought in private transactions by one capitalist from another; they appear only as wages paid to the laborers for the added utilities of form, quality and place, until they reach the ultimate form of consumption goods. It is only these consumption goods that appear as commodities and then they appear as the sum of the prices received by the several groups of capitalists at the sale of their total produce of consumption goods. Since all of the integrated industries are therefore selling only consumption goods, the laborers of one industry use their wages in buying these consumption goods from the capitalists of other industries.

But the laborers produce a larger quantity of consumption goods than the quantity which they consume. This excess is the money value of consumption goods purchased by the capitalists themselves from each other for their own consumption purposes. Thus the only private transactions in this social process of capitalist and laborer are the payment of wages to laborers and the purchase of consumption goods from other capitalists, partly by means of the wages and partly by means of the excess which capitalists have received at the sale of their own consumption goods above what they have paid as wages. There are no middlemen whatever, no bankers, no borrowing and lending, no stock and produce exchanges, no wholesale prices. There are only wages and retail prices.

Thus the beginning and ending of the social process is consumption goods. It is these consumption goods that constitute the real wages of labor and the real profits of capitalists. All else are intermediary and instrumental. If so, then the real wages, or consumption goods used up by laborers, are the social capital which society assigns to support the producers during the process of creating consumption goods to serve again as real wages and as a surplus, real profit.

It is evident that in this social process the two systems of measuring the quantities of consumption commodities can be used, either the man-hour system of Ricardo and Marx or the monetary system of Jevons and Wicksell. The objection to the man-hour system of measurement has been made by Wieser and Whitaker that the labor economists confused the two ideas of the cause of value and the measure of value, the inference being that this confusion does not occur in the case of money, which is truly a measure of value and not a cause of value. Labor may be a cause of value in that it produces commodities that have value, but it is money that measures the value.

This objection appears to be unsound when we change the idea of cause from that of a static and metaphysical embodiment in things to that of motion and change caused by human beings. With this different point of view we can observe that money also as well as labor, is a cause of changes in the value of the thing measured. In both systems of measurement we are entitled to use the words cause and effect in their proper volitional sense of effort to obtain an object, the object, in this case being the ultimate purpose of obtaining a quantity of consumption goods and the effect being the quantity actually obtained. The instrumental purpose is the means of obtaining

the goods. In the case of obtaining the goods against the resistance of nature the instrument is labor-power. In the case of obtaining the goods against the resistance of other persons the instrument is money. In both cases there is the union of cause and measure, a union that does not occur in the physical sciences. Causation means power of the will to change the magnitude of something. A thermometer does not change the temperature which it measures, and a voltmeter does not change the voltage or pressure of the electric current which it measures. But in economic science the man-hour is a supposed unit of labor-effort which changes the quantity of commodity against the resistance of nature's forces, and the dollar is the unit of inducement which causes other persons to give up a larger or smaller quantity of commodity or service - the number of man-hours required to produce a unit of the commodity is its "natural" price; the number of dollars required to buy the commodity is its monetary price. The true criticism of the labor economists is that they were measuring efficiency instead of scarcity.

We can get an exact unit of measurement of physical forces because the instrument of measurement is independent of the force to be measured. But there is no exact measure of volitional force, whether it acts through the human body or through the persuasiveness of prices, because the force itself is none other than the very changes which it causes in the quantity of the object obtained. Hence the only method of obtaining the concept of a stable unit of these highly variable causes of change is the statistical method of averages and probabilities. It is the average of man-hours that tells whether efficiency is increasing or decreasing; and the average of prices that determines whether the possession of money yields a greater or less control over the quantities of commodities and services.

Furthermore, it is not the quantities of commodities nor the prices of commodities that are measured. It is the value of commodities, and value is a two-dimensional social magnitude. The "natural" price of the physical economists was the quantity of man-hours given for a single unit of commodity, while the value was the value was the number of man-hours given for several units of the commodity; just as the monetary price is the number of dollars given for a single unit of commodity, but the money-value of the commodity is the number of dollars given for several units of the commodity. The two variable dimensions are the number of money units and the number of commodity units. And, in order the measure one of the two dimensions the other must be supposed to be constant. In order to measure price the number of commodity units is kept constant at one unit, but the number of money units (or labor units) is variable, and this variability is the change in price. But, in order to measure value the price is kept constant but the number of commodity units is variable and this change in quantity becomes a change in value, at that price. Hence value, as a measurable magnitude, changes by the two dimensions of price paid per unit and quantity of units purchased. The "natural price" of Ricardo and Marx was an average of the variable number of man-hours per unit of commodity. But their "natural value" was the variable number of units of commodity at the given "natural price." This, however, is the measurement of efficiency. So with money. The money price is the variable number of dollars per unit of commodity. The money value is the variable number of units of commodity at the given money price. Value changes if prices of commodities change and if quantities of commodities change.

Thus it is that "money" is used by the "pecuniary" economists not because it is "money" that people seek, but because money has the

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two attributes of cause and measure - as cause it is an instrument of acquisition, as measure it tells the quantities that they acquire. So with the labor-power of the physical economists. Labor was used by them, not because they wished to labor but because they were interested in getting away from the monetary fallacies of the mercantilists and to get down to the "natural" prices. Hence labor had the two attributes of cause and measure - as cause it is an instrument of acquisition - as measure it tells the quantities they acquire. Their confusion arose, not in the confusion of cause with measure, but in the double meaning of acquisition. In one case acquisition meant production, the measure of whose quantities produced we now call efficiency. In the other case acquisition meant "purchase" the measure of whose quantities acquired we now call scarcity.

Hence will be seen the significance of Wicksell's introduction, probably for the first time, of a stable average of prices in order to obtain the concept of a stable magnitude of natural capital. By supposing the average of prices to remain stable then the only variable in the dimensions of value will be the quantity of goods. If the average of retail prices of consumption goods is stable during a period of time, then the quantity of consumption goods purchased by laborers at the beginning of the period will be equal to the quantity of consumption goods sold to laborers at the end of the period, and there will be no profit, rent or interest. But if the marginal productivity of the process yields a larger quantity of consumption goods than the quantity sold to and consumed by laborers, then the excess quantity may be shared as profits, rent or interest.

It is thus to be noticed that the price quotations required by Jevons' and Wicksell's theory of natural capital and natural interest

are the retail prices of consumption goods and not the wholesale prices of the authorities whom he cites. This is because, in developing his theory of natural capital the intermediate transactions of selling and buying commodities by middlemen, as well as bank credit transactions, are eliminated, and only the input of consumption goods, purchased as real wages at retail prices, is compared with the output of consumption goods sold at retail prices.

It is also to be noticed that Wicksell's theory of natural interest does not confuse physical productivity with value productivity. He fully takes account of the two variable dimensions of value, namely quantities and prices. Physical productivity is the production of quantities, but "value productivity is the money income received by selling those quantities at current prices. In Wicksell's theory the prices are not eliminated - they are only assumed to remain constant by assuming a stable average of prices. If so, then the variable quantity is the marginal productivity. By overlooking Wicksell's concept of a stable average of prices one may be misled into thinking that Wicksell confused value productivity with physical productivity. He did not confuse the two - he merely used a concept, marginal productivity, as the variable quantity, while the other quantity, prices, was assumed to be constant. But marginal productivity has no system of measurement except the man-hour system of Ricardo and Marx. Thus his theory is indeed a theory of value productivity, with the two variables of value, namely, prices and man-hour quantities of commodities.

II. Average Period of Production

We have spoken of consumption goods as the beginning and ending of the social process. The process, however, has no beginning and

1 Cp. Fetter's Criticism, Proceedings Amer. Econ. Assoc., March, 1924. See reference below.

no ending. The only way in which this endless process can be handled in economic theory is by constructing in imagination an "artificial" beginning and ending, which Wicksell did by his device of "an average period of production." This concept was essential to his theory of natural capital, natural interest, and marginal productivity - it became his average period of investment. The physical economists had distinguished between fixed and circulating capital and Jevons between free and invested capital. The two, however, we found to be identical but with different systems of measurement. Hence we may use the physical terms. Fixed capital was buildings, machinery, soil, fertility, while circulating capital was mainly raw material and finished consumption goods. But fixed capital is also circulating if you give it time enough. What is the difference between a pile of coal, an inventory of raw material or consumption goods, a building, a machine and the fertility of the soil? They are all used up in the process of production and reappear as finished consumption goods sold by the retailer. The coal and other inventories disappear by depletion, the machine by depreciation, the fertility by exhaustion. Hence the difference is not between circulation and fixation, or between free and invested capital but is the difference between the rates of turnover. "Turnover" is the modern name for "circulation." It adds to the older meaning the idea that the total amount remains constant while its constituents are "circulating." The pile of coal may turnover, say, twelve times a year; the inventory of retail goods may turn over twenty times per year; the machine, or fertility, may turn over once in twelve years, and so on. They all "circulate" as parts of the whole, but the whole remains constant, and thus the whole "turns over" by the continuous labor process of consumption, restoration, repair, maintenance which makes good the depletion, depreciation,

exhaustion, and consumption. Thus Wicksell's average period of production is the average rate of turnover of all fixed and circulating capital. The calculation of this rate of turnover becomes a matter of importance in all valuations for purposes of taxation and regulation of public utilities. Its calculation, in the one case, determines the reduction in taxes to be allowed on account of depreciation, and in the other case the payments which consumers are required to make in order that the owners of the public utility may have a constant "physical value" of the plant. Thus, if the depreciation allowance is 8 per cent per year over and above maintenance and repairs, then the consumers must pay, besides all other costs of production, an additional 8 per cent per year for depreciation. This is the rate allowed in Wisconsin on electric railways, indicating that the life of the plant, or the average rate of turnover, or Wicksell's average period of production, for that type of enterprise is $12\frac{1}{2}$ years. In the case of waterworks the rate of depreciation is estimated at 3 per cent, indicating about 33 years as the average rate of turnover of all the physical property, or Wicksell's average period of production.

These are estimates for individual enterprises. If, from the social point of view the average rate of turnover is calculated for all undertakings, then the calculation must be made from all consumption goods used up in the process of production to all consumption goods produced during the process. This calculation of the average social rate of turnover has been estimated by Mitchell, on the basis of calculations made by Sir Josiah Stump, at something between three and four years for the United States. In other words, as Mitchell says, "The man-made equipment with which the American population works represents a value equivalent to between three and four years' effort

of its money-earners." Since, for other countries the estimate runs as high as six or seven years, we may estimate it for the world at large as five years. In other words the accumulated stock of wealth, measured by a stable average of prices, in proportion to current income of consumption goods at the same price average, is as 5 to 1, and Wicksell's average period of production, or average rate of turnover of the social production process, is five years. Within a period of five years, on the average, a constant quantity of fixed and circulating capital, measured by a stable average of prices, is reproduced, some of whose items last one day and others endure for years.

This then, is also the average period of investment. For what is it that remains to the capitalist after his wages have been paid and the physical things produced by labor immediately lose or change their physical existence? There does not remain for him the money wages which he has paid, nor, of course, the consumption goods purchased and consumed by the laborers. There remains only a book account of money wages paid for the production of fixed and circulating capital. This is his "investment," an entirely intangible value dependent upon the expectations of the future output at future prices.

Taking, for illustration, a production period of a single year,² and supposing an entire investment of \$1,000,000 is expended for consumption goods at the beginning of the year, then, in order that the total quantity of consumption goods returned to the investor may remain the same as the total quantity consumed at the beginning of the year, the average of retail prices must remain stable, so that the

1 Mitchell, Wesley, Business Cycles 98 (1927). Stamp, Sir Josiah, "The Wealth and Income of the Chief Powers," Jour. Royal Statistical Society, July 1919.
 2 Wicksell, ibid., 117 ff.

average investor shall receive the equivalent \$1,000,000 at the sale of the equivalent quantity of consumption goods. In order, then to receive 6 per cent interest at the end of the period, the quantity of consumption goods, at the stable average of prices, must be increased 6 per cent. If the rate of interest is 10 per cent, this output, at the end of the year, must be increased so that, with the average of prices remaining constant, it will sell for \$1,100,000, and so on. This quantity of furnished goods, whose sale yields \$60,000 or \$100,000, as may be, is Wicksell's "natural interest" (der natürliche kapitalzins), determined by marginal productivity, but the money increase itself, \$60,000 or \$100,000, is its value-productivity (geldzins).

This method of reasoning is exactly the social process of Ricardo and Marx, but with dollars substituted for man-hours, and therefore a change from efficiency to scarcity. With Ricardo and Marx the man-hours, originally imputed to the consumption goods used by laborers remained imputed to the ultimate output of consumption goods. So many man-hours, say 1,000,000, were imputed to the consumption goods used up by laborers in the process of production, while at the end of the process an additional 60,000 or 100,000 man-hours were imputed to the additional output, known as interest and profit. Relieved of its metaphysics, this was strictly a process of physical productivity, whose proper measure is man-hours, and its proper name is efficiency.

But, with Wicksell, the prices paid for the original natural capital of consumption goods totaled \$1,000,000, and while that natural capital was used up and disappeared yet it reappeared in an augmented amount - \$60,000 or \$100,000 - at the same average of prices. This augmentation is its "value productivity." But this value reappeared, not as anything imputed physical, but as a really valuable

intangible right of property, separated entirely from the consumption goods and from fixed or circulating capital, and as such, negotiable on the money market or stock exchange, while the fixed and circulating capital continues its turnover on the commodity markets and the labor market.

But there still remains the question, why should the social costs of production be limited to the consumption goods used by laborers? Jevons, like Ricardo and Marx, had made this limitation. But Wicksell, following Bohm-Bawerk, added the consumption goods going to owners of land and fixed capital in the form of rent. Capitalistic economy, said Bohm-Bawerk, consists, for the most part, in employing, not only labor, but the uses of land, for the purpose of future consumption; and, inversely, the present consumption is derived, for the most part, from the labor and land-uses of the past. The physical commodities created in the process are merely "symptoms" of the dedication of present powers of production, namely labor and the forces of nature, to the service of the future. It is by means of present consumption goods that not only laborers but also the owners of land, are compensated, the one for the use of their labor, the other for the use of the productive powers of nature, for the purpose of producing future consumption goods. Consumption goods constitute therefore not only a wage-fund, but also a ground-rent fund,¹ and the amount of money paid to both wage-earners and owners of natural resources constitute the magnitude of investment.

The term "ground-rent," however, was not limited by Bohm-Bawerk or Wicksell to the Ricardian idea of rent - it applied to all fixed capital, like machinery which had their own productive forces which

1 Wicksell, Ibid., 114, 115.

aided labor in the production of goods. Wicksell employed this idea of rent to include not only Ricardo's ground rent, but also all rents, in the sense of all payments for the use of all capital instruments, as, for example the rent of a house, the rent of a machine, the hire of a horse, and so on. Thus enlarged, the social concept of "free" capital as a social cost of production, is extended to that much of consumption goods as can be attributed to rents paid for the use of land and the use of fixed capital goods.

But the consumption goods going to profits and interest - that is, real profits and real interest - are not to be included, according to Wicksell, as a part of social capital, along with the consumption goods that go to laborers and owners of natural resources as real wages and real rents, because they are private costs and not social costs of production, and because they are not paid in advance but are determined by the amount of marginal productivity. Interest is, indeed, a private cost of production because it is paid by a borrower to a lender, but it is not a social cost of production because, although it deducts from the share going to real wages and real rent, yet, like profit, it is not paid in advance, but is a contingent income paid out of the excess product over and above the real wages and real rents, depending on marginal productivity.

Here it appears that, by including real wages and real rent, s but excluding real profits and real interest, as social costs of production, Wicksell does not carry out his original distinction between the private and the social point of view. It turns on the two meanings of cost. From the private point of view a private cost is an individual sacrifice such as working or abstinence, or giving up to "nature" or to others anything that belongs to self; and private value is the income received for this service. But, from a social point of

view, a social cost is that share of the total output of consumption goods that must be sacrificed to individuals or classes in order to induce them to undergo the individual sacrifices necessary to the social process of production. And there is no such thing as social value - there is only social output.

This distinction goes back to the profound distinction first made by Ricardo between production and distribution, and his origination of the idea that the quantity of consumption goods going to labor was a social cost of production equivalent to his social capital, but that the share going to landlords, although it was a social cost, yet it was one for which no equivalent service was rendered. He assumed, however, that the real profits of business men represented an equivalent service rendered. Thus, from the social standpoint, cost is a distribution to individuals of shares of the total but limited output of consumption goods which goes to those whose services or property was necessary for production, but private cost was the sacrifices of individuals made on behalf of others. From the private standpoint, cost is individual sacrifice of one's own property; but from the social standpoint cost is the share of the social output awarded to individuals and therefore a sacrifice made by all other individuals, whether it does or does not coincide with the services rendered by the individuals or classes of individuals who receive it. It is the same two ideas of cost which run through economic theory and practice, the positive cost of outgo and the negative cost of set-off. The mechanism of transaction, by which this is accomplished, will be considered later.

III. Quantity and Price of Waiting

Interpreting social cost in this fashion as a real compensation

of consumption goods made to individuals for services rendered to society, we have to consider not only the equivalence between the services rendered and the real compensation received in the cases of Wicksell's wage-earners and land owners but also in the cases of his excluded interest-receivers and profit receivers. The two questions as to the measurement of the quantities received and the mechanisms of transactions by which the quantities are distributed. In answering the first question we get our clue from Cassel; in answering the second, from Fetter.

Cassel deals with the magnitude of investment and interest, the social equivalent of Wicksell's Natural Capital and Natural Interest. According to Cassel¹ interest is a social cost of production, the service for which it is paid being the service of waiting. Waiting is not merely a claim to a share of the accrued net income at the end of the period of waiting, as held by Wicksell, it is a factor in the productive process of manufacturing goods before the period of waiting is closed and the goods are produced. Thus waiting, or abstinence, is not a negative factor of "not-doing" anything towards production, while labor or working is the positive factor - but waiting is itself a human service of furnishing the means of production, just as elementary, primary and productive as is the service of working. "Coal," he says, "is undoubtedly a factor of production but not an independent one: it is produced by other factors, principally labor. But waiting cannot in this manner be resolved into more elementary factors: it is human exertion of quite a separate and particular character."²

Thus Cassel distinguishes, as did Ricardo, Marx and Jevons, the human services from the physical goods as factors of production, and

1 Cassel, G., The Nature and Necessity of Interest (1903).

2 Ibid., 89.

thus disposes of Bohm-Bawerk's idea, taken over by Wicksell, that the forces of nature are to be treated as additional to human exertion. Coal is one of the forces of nature - in fact it is "land," and so also are the forces of nature operating within all forms of circulating and fixed capital. But, instead of resolving those forces of nature solely into the service of labor, Cassel resolves them also partly into the service of waiting. A ton of coal differs from fixed capital only in the magnitude of the quantity of waiting, just as it differs in the magnitude of the quantity of labor required to produce it. The elementary factors of production are working and waiting. The derived factors are physical goods, like coal, wheat, metals, machines, buildings, and finally consumption goods. These derived factors are not additional to the elementary factors - they are "symptoms" along the process of the two elementary human services of working and waiting. This was quite the idea of Ricardo, Marx and Jevons, but with waiting added to working. In fact, by adding rents paid for the use of nature's forces, Bohm-Bawerk and Wicksell were confusing human services with both technology and social cost. The "uses" of nature's forces are merely man's technological devices for increasing the total output produced by the services of working and waiting. But rents, wages and interest, in the real sense of consumption goods received, are the share of that total output which can be commanded by those in position to withhold the supply of land, labor, or waiting.

The magnitude of the quantity of work can be measured, relative to the quantity of output, by man-hours, but how can the magnitude of the quantity of waiting be measured, since it involves a "quantity" of time? Cassel's measurement of the quantity of waiting is a modernization of Turgot. Turgot had distinguished "capital" from "capitals." Capitals were commodities, including the subsistence of labor, equivalent to Wicksell's "natural capital." But "capital" according to

Turgot, was the money value of capitals, equivalent to Wickseil's "money capital." And Turgot's "quantity of value" was therefore, the quantity of commodities which a quantity of metallic money could buy at the prevailing price. Thus his "quantity of value" was a quantity of money; quantity of money was a quantity of capital; this quantity of capital was the quantity of commodities and labor purchased by means of the money.

Hence, with Turgot, there were two social magnitudes of money-value. One was the quantity of commodities and labor purchased at existing prices, whose resulting sum of value was capital. The other was the quantity of commodities and labor at existing prices paid for the use of that first quantity during a period of time. This was interest. These were, then, two dimensions of scarcity. The first was the scarcity of money relative to the various scarcities of commodities; the other was the scarcity of savings, always, according to Turgot, in the form of money, but relative to the demand of borrowers for the use of those savings. Thus the money paid as interest was the price paid for the use of this money capital, or its equivalent, the mass of "capitals."¹

Cassel then identified, as did Turgot, this "use of capital" with the "service of saving," equivalent to Senior's "service of abstinence," but gave to it the name, "service of waiting," in order both to avoid ethical implications and to indicate clearly that its dimensions belonged to future time. Reduced to an "arithmetical quantity," he said, this "use of capital is a quantity of two dimensions, the measure of it being a certain sum of value into the time of use."

¹ Turgot, A. R. J., The Formation and the Distribution of Riches (1769, tr. 1898).

But this, he continued, "is the same measure as that of waiting; and consequently we may infer that waiting and use of capital denote the same thing. In fact, they signify one and the same productive service; 'waiting' is used to express what is done by him who supplies the service, and 'use of capital' to express what is obtained by him who buys the service."

Thus Cassel identified not only his own magnitude of "waiting" with Turgot's three expressions, "use of value," "use of capital" and "use of capitals," but also with the two dimensions that Jevons had proposed as the "amount of investment." Jevons found that the "amount of investment" was the function of two variable quantities, M, or amount of money invested, and T, the duration of time during which the investment lasted, so that the dimension of Investment is MT.

But Jevons also had constructed a quantitative dimension of "abstinence," out of his own original discovery of subjective utility as a diminishing intensity of pleasure or satisfaction. Thus the magnitude of abstinence was UT, the symbol U being the quantity of final utility, and the symbol T being the duration of Time. But UT, or the magnitude of abstinence, was, according to Cassel, the same magnitude as MT, or magnitude of investment. Why not, therefore, name it also M or money, instead of U, or utility? Such was Cassel's interpretation. "It does not seem correct," said Cassel, "to use such a term" as utility. "It cannot be anything but fictitious, so long as we have not really established a method of directly measuring intensities of feeling. The only measure of utility available for the economist seems to be the price offered for the commodity; and, if we accept this measure, we must replace U by M in the dimension for abstinence given by Jevons. This dimension becomes then identical with that of investment of capital."

1 Cassel, *Ibid.*, 48.

2 *Ibid.*, 49 n.

It will thus be seen that Cassel boldly cut the Gordian knot of apparently inextricable subjective and objective theories of value by the simple device of reducing them all to the same variable magnitude of two variable dimensions, Money and the Future Lapse of Time. There are, as we know, several different names for this same economic quantity, some of which describe the emotions that swell up from the inner consciousness; some of which describe the visible behavior of business transactions; and some of which describe social institutions. For, we are, in fact, describing the same variable magnitude of capital with a three-language hypothesis, the subjective language of feelings, emotions, calculations; the behaviorist language of business transactions; and the institutional language of debt. Subjectively we may call it abstinence, waiting, thrift, or the saving instinct; objectively we may call it money, capital, investment, savings, capital goods, natural capital; and institutionally we may call it that incorporeal property of Debt which binds the future behavior of one to the performance of delivering a "natural" commodity or service, and the future behavior of another to the payment of a money debt.

The reasoning by which Cassel creates this incorporeal magnitude of Waiting measured by Money and Time, may be seen in his analysis of Cairnes' "measure of abstinence" and MacVane's concept of waiting.¹ Cairnes had observed that the "measure of abstinence was the quantity of wealth into duration of abstinence."² MacVane³ had criticised this as follows: "Abstinence is not itself a primary fact of industry . . . the more fundamental fact is the length of time that must elapse between the outlay of labor and the possession of the finished product."

1 Cassel, Ibid., 41 ff.

2 Ibid., 41 ff.

3 MacVane, "Analysis of Cost of Production," 1 Quar. Jour. Econ., p. ? (1887).

Macvane then proposed the term "waiting" instead of "abstinence." But, says Cassel, Macvane's term "waiting" does not contain more than one element - it is a "quantity of one dimension," the dimension of Time. This is of course inadmissible; "waiting a certain time" means nothing, when it is not stated what is postponed. Perhaps it is Macvane's intention that "waiting" should be taken to denote postponement of some concrete thing or enjoyment. But in that case we should have to give up the character of waiting as an arithmetical quantity, and this would make waiting a very useless conception. But there is a still graver objection to such a definition of waiting. There is very seldom a postponement of anything concrete; the man who saves does not as a rule know what he would have used his money for, if he had not saved it; he simply postpones the consumption of a certain sum of value. Hence "waiting" is, as a matter of fact, measured by the product of such a sum of value and the time of waiting. This measure gives the ultimate definition of waiting; and waiting in this sense is one of the services which constitute the concrete costs of production.¹

Thus Cassel disposed of Cairnes' postponement of concrete wealth by converting it into the money value of that wealth. This money value he identifies with a quantity of "waiting," or "saving," or "investment," as the identical magnitude of two dimensions, the amount of money "saved," "invested," or "waited for," times the duration of the "saving, investing or waiting." Thus a money loan of \$1,000,000 payable one year hence is the same magnitude of two dimensions, MT, whether it be named saving, investment, waiting, or debt. And, as Wicksell showed, the social aspect of this magnitude is the quantity of consumption goods purchased by means of the quantity, M, and, if

¹ Cassel, Ibid., 41, 42.

the average of prices is stable, the equal quantity sold at the end of the average period of production, T.

With this identification of a variety of names for that magnitude which, in the measurable form of private transactions is the incorporeal property of Debt, and in the social form is that of human service of waiting for future consumption, we may begin to speak of the quantity of waiting, the scarcity of waiting and the price of waiting. Since waiting is a universal phenomenon, only a portion of it emerges on the markets where its quantity can be measured. This quantity of waiting, when thus measured on the markets, is of the two variable dimensions, the number of dollars and the duration of the debt, the average duration being the average period of production, say five years, and the real or social waiting, not always measured, being the quantity of consumption goods waited for by those who "invest" in wages and rents.

The scarcity of waiting, therefore, is the relation between the quantity wanted and the quantity available at the time, which when measured, is the relation between the quantity of money wanted by borrowers, indicated by their "bids" and the quantity offered by lenders, indicated by their offers. But, from the social standpoint, unmeasured, it is the relation between the quantity of consumption goods offered to be paid by borrowers in the future and the quantity of consumption goods wanted in the future by those who are willing to wait.

When these two quantities meet, so that an actual borrowing and lending occurs, the scarcity relation between quantity of waiting bought by borrowers and the quantity sold by lenders is equalized by the rate of interest, which, measured as it then is by money, is the price paid for the use of money, or, from the social standpoint of

real interest, it is the quantity of additional consumption goods to be paid in the future for the particular service of waiting for future consumption goods.

Thus we begin to approach the phenomenon of bond yield. It is the money price paid for so much of the total quantity of social waiting as happens to come upon the markets; and, if properly computed, the rise or fall of the bond yield rate of interest on the markets may be taken as an index of the increasing or decreasing scarcity, at the time, of the social service of waiting. As such this increasing or decreasing bond yield, multiplied by the total investment, on the assumption of a stable level of the average of prices, is an index of the quantity of consumption goods which society pays to those who wait for the world-wide process of production to reach its fruition in consumption goods. It is this bond-yield that we shall call "interest" proper, equivalent to Wicksell's natural interest, in order to distinguish it from the other, which we shall call the bank rate or the commercial rate.

IV. The Mechanism of Transactions

The second question which we raised as to the mechanism of transactions whereby the social cost of waiting is deducted from all other real incomes of consumption goods and turned over to those who do the waiting, requires, first, that we repeat what it is that occurs in competitive transactions. Each transaction is a transfer of a quantity of value, not a transfer of a physical product but a transfer of a right of ownership over expected physical products, which right of ownership has a present value. Hence the value which is transferred consists of three dimensions, the duration of waiting, the price of the product and the quantity of the product. A change in any one of these dimensions changes the present value of the right of ownership

which is transferred at the point of time when legal control is transferred. Hence every competitive transaction involves the three-fold variable of value: - futurity, price and quantity.

We approach the subject of these three variables by the aid of Fetter's analysis of rent, interest and profit. Bohm-Bawerk and Wicksell had made rent and wages a social cost of production but had excluded profits and interest. Rent, like wages, they said, was paid in advance and therefore was a social cost; but profits and interest were received at the end of the process and therefore were not a social cost. But Fetter, as we interpret him, reduces their concept of rent to a special case of the general concept of net income, and their concept of interest is restricted to two aspects of discount, the discount of future net income and the discount of future gross income. The former discount becomes bonds and stocks, the latter becomes wages and wholesale prices.

Within the concept of net income are the two concepts of a regularly recurring income distinguished as rent or interest, and an uncertain or risky income, usually designated profit. That part which is expected regularly to recur can be commuted by stipulation into a present value, by the process of capitalization, yielding the concept of a "rent charge" or a bond and mortgage, while that which is uncertain or risky yields the concept, according to the degree of risk, of preferred and common stock.

Since the word "rent" has obtained, under the influence of Ricardo, a specialized economic meaning of differential net income, and since Fetter, by reverting to its primitive meaning has given to it the broader meaning of any net income whatever, regardless of Ri-

1 Fetter, Frank A., "Recent Discussion of the Rent Concept," 15 Quar. Jour. Econ., 19-30 (1900); "The Passing of the Old Rent Concept," Ibid., 416-455; Principles of Economics, chaps. 8, 10, 15, 17 (1904) "Interest Theories and Price Movements," Proceedings, American Econ. Assn., March 1927, pp. 62-122.

cardo's differentials, we may simply substitute the term "net income" for Fetter's meaning of rent. Profit, therefore, is also a net income concept, its difference from rent being its uncertain quantity while rent is regular and recurring.

Under the feudal system, Fetter points out, land was rarely sold outright, but a "rent charge" was sold for a present sum of money. Afterwards, when land itself was made alienable this same "rent charge" becomes a "bond and mortgage," and that which had been called "rent" is now called "interest." The rent contract became an interest contract. The land is now looked upon as security for the bond and interest, where formerly the land was looked upon merely as yielding a rent. Finally, as industry developed alongside agriculture, the bond and mortgage contract took the place of the rent contract, and the term "rent" was restricted to the hire of physical goods.

Yet economically they were the same, and we can thus see the economic identity of the value of bonds and the value of land. The loan of money is, economically, not different from the feudal purchase of a rent charge. Its difference is the legal difference in the security. Each is the purchase of expected regularly recurring payment, known as interest in the case of the loan and rent in the case of the land. This becomes the equivalent of Turgot's "value of an estate," the rent-charge becoming equivalent to a bond and mortgage, the "value of the estate" becoming equivalent to the value of the stocks and bonds.

A person can either rent his land or business establishment to another for a recurring payment, in which case he becomes a creditor, and then, if his rent charge is made negotiable, the buyer, at the market price, owns in effect a bond of which the

rent charge is the "yield" in the market price of the bond. Or he can borrow money on the security of the land, in which case he becomes a debtor, and, if his note is negotiable, then a buyer of the note, at the market price, owns a bond of which, now, the interest payments are the "yield" on the market price of the note. In either case the management of the estate remains with the debtor, but in the first case he pays a rent, in the second case he pays interest.

This, however, means a change in the meaning of the word "uses." In the first case, a rent is paid for the "use" of the physical estate; in the second case interest is paid for the "use" of money. In the one case the price paid for "use" is a regularly recurring rent, in the other case it is a regularly recurring interest.

What, then, is the economic difference between rent and interest? This was the great puzzle of the 16th century when interest on money was about to be legalized by the Act of Henry VIII. Fetter rightly points out that, in the purchase price of a rent charge interest was already tacitly paid by a rate of discount. Indeed this was a method of evading the usury laws. The same is true of the purchase price of a note or bond. What is purchased is the right to have a fixed, recurrent payment, whether rent or interest. That which is fixed and recurrent is the rent or interest. That which is unfixed is the market price of the right to have it. It is this market price of the debt that is unfixed, and therefore a rise in this market price of the debt is equivalent to a fall in the rate of yield, but a fall in the market price of the bond is a rise in the rate of yield.

How, then is this interest paid? Fetter's explanation begins with the language of psychology and then proceeds to the language of prices. His psychological terminology is "time-value" or "time preference", equivalent to Bohm-Bawerk's "underestimate of the future,"

but stated in the volitional language of choice, rather than the hedonic language of pain and pleasure. Interest is paid by discounting the future rents or interest. The purchase price of the rent-charge or of the interest-charge is less than the sum of all the expected accruals of rents or interest-payments. Thus the mechanism of transactions by which interest is paid is the mechanism of a set-off deducted from the prices now paid for future rents and future interest payments.

If this is the case, then it was error in Bohm-Bawerk and Wicksell to hold that interest was not paid in advance of production, while rents and wages are paid in advance. Rents and wages are paid positively and openly in advance by explicit agreement. Interest is paid secretly and implicitly in advance by paying less for rents and wages than would be paid if the interest had not been quietly abstracted in the tacit process of set-off from rents and wages at the very time when they were frankly and openly paid in advance.

How, then, is the transition to be made from this set-off for interest against rents and wages to the set-off for interest against prices of the raw materials, wholesale commodities and fixed physical capital? In other words what is the relation between the present discount of the expected net-incomes of rents and interest and the present discount of gross income from the sale of capital goods? Fetter says that, in all cases "the future uses are discounted and have entered into the prices of goods as less than they will be when realized as actual rents."

This statement involves the distinction between net income and gross income. The future uses are future net incomes, the "prices" are gross income. The future uses are future net incomes, the "prices" are gross income. When the term "rent" is used as payment for the

"uses" of land and fixed capital it is evident that by "uses" is meant a net income derived from all the transactions of buying and selling. So also when the term "interest" is used as payment for the "use of money. The "uses" of land, capital and money are the succession of net incomes expected to be derived from the thousands of expected transactions which constitute the estate, or the going concern. Hence of course, the value of Turgot's landed estate or the value of any going concern is the present discounted value of the total expected net income of the future, including that stipulated share of net income known as rent or interest and that uncertain share known as profit. Capitalization is capitalization of expected net income.

This is also the only workable meaning that can be given to Wicksell's "marginal productivity." It is the marginal net income, whether it be rents or profits derived from all social economic processes; the term "marginal" signifying the fringe where industry is expanding or contracting its quantity of output inversely to the fall or rise, the lead or lag of prices. Marginal productivity is the elastic fringe of increasing or decreasing net income for all industries.

But the gross income is the expected prices times quantities of all the expected output of commodities. If the social point of view is taken then this expected gross income is the expected prices times quantities of consumption goods, so that the present prices and quantities of the instrumental, or capital goods, that is, wholesale prices, wages, and the values of fixed capital, are the present discounted prices of all expected consumption goods at their expected retail prices.

Of course, there are two variables, prices and quantities, and there are thousands of complex elements, so that it will probably

never be possible to separate out and measure or correlate retail prices and wholesale prices with reference to the discount of future retail prices. But if underestimate of the future is a universal fact, then this discount of the future gross income of consumption goods at the expected retail prices is tacitly and secretly made in the present wholesale prices and quantities of circulating capital, fixed capital and labor. Otherwise real interest, as a share of the total consumption goods, could not be paid by the others to those who perform the service of waiting. All the prices of all the instruments of production, are, as Fetter rightly maintains, the discounted prices of future consumption goods, and this is the price mechanism by which interest becomes a social cost of production.

When this interest, by stipulation in private contracts, is measured off as a regularly recurrent net income, then a two-fold process happens - a bond appears on the stock market reflecting a price discount mechanism on the commodity markets. These commodities are, all of them, the physical form of savings, and their prices are the discounted prices of future consumption goods. Yet, since all of them are reducible to the price and quantity of labor, as Jevons' quantity of investment and Cassel's "elementary factor" of production, so their universally discounted wholesale prices are the market mechanism by which Cassel's other elementary factor, waiting, is deducted in advance from wages.

We thus reach a two-fold conclusion regarding Wicksell's marginal productivity, from the social point of view. Negatively, if marginal productivity alone were the factor that determines the rate of natural interest, then, according to Ricardo, the rate of natural interest would be a continuously declining rate along with the diminishing productivity of agriculture; but, according to Marx, it would

be a continuously increasing rate along with the increasing productivity of invention and machinery. Hence it cannot be either productivity as a whole nor even marginal productivity that, of itself, determines the rate of natural interest.

On the other hand, positively, the marginal expansion and contraction of industry depends upon the social supply of waiting relative to the social demand for waiting; in other words, upon the scarcity of waiting. And the measurable index of this social scarcity of waiting is the bond yield. Furthermore, the price and quantity mechanism, which is the mechanism of transactions, by which this changing scarcity of waiting enables those who furnish the service of waiting to obtain a share of the consumption goods for which they wait, is a tacit set-off against all wholesale prices and the money values of all land and fixed capital, corresponding to the changeable rates of bond-yield at which the expectations of the prices and quantities of consumption goods are discounted.

Thus Wicksell's "natural" rate of interest becomes the bond yield, and we should look, statistically, for its test of validity, in the prices and quantities of raw materials and fixed capital "invested" for long-time production periods. This class of prices and quantities should be expected to increase when bond yield is low, thus indicating an abundance in the supply of waiting. But these prices and quantities should be expected to be reduced, or their rate of increase slowed up, when bond yield is high, indicating, as it does, greater scarcity of waiting. All of these statistical tests, however, are governed by Wicksell's assumption of a stable average of retail prices.

If, then, the other and uncertain factor of expected net incomes, namely profits, is treated in the same way, we have the concept of

"stock yield." And it is the combined bond yield and stock yield that are an index of the total expected net incomes of consumption goods, for capitalists and investors, while it is the wages, wholesale prices and money values of fixed capital that are the present discounted value of the gross income of expected consumption goods.

Thus the social cost of production is not only the Ricardian quantity of consumption goods apportioned to labor, and is not only this and the additional quantity apportioned to owners of land and fixed capital, it is also nothing less than the total quantity of all consumption goods apportioned to all who furnish any factor of production, including waiting and business enterprise, that is necessary and limited in supply.

The further question as to whether these shares of the social output of consumption goods are equal to, or in excess of, or short of, the service rendered by the owners of these several factors, is that question of reasonable value which we approach in the concluding chapters. We are here concerned with the special case of the relation between the bond yield and the bank rate and the effects of this relation upon both the total production of consumption goods and the shares obtained for waiting and business enterprise.

V. Bank Rate and Bond Yield

The bank rate on commercial paper has to do with expected gross income, but the bond yield with expected net income. The gross income is the income expected through the sale of commodities. The net income is the income expected through the difference between the expected purchase prices and the expected sale prices of commodities. Gross income is derived from repetition of the seller's side of all transactions; gross outgo is derived from the repetition of the

buyer's side of all transactions. But since gross income for sellers is gross outgo for buyers, and every sale is also a purchase, we have to distinguish the repetition of transactions as a whole from the repetition of the incoming and outgoing sides of transactions. A repetition of transactions as a whole gives gross income for one and gross outgo for another, but a repetition of the buying side of his own transactions set over against a repetition of the selling side of all transactions yields for each individual, net income, or loss. Thus net income is derived from two transactions of the same person. Gross income and gross outgo are derived from one transaction between two persons. Stocks and bonds are the discounted value of one person's expected net income, but prices are the discounted value of two persons' gross income for one and gross outgo for the other. The bank rate has to do with prices and gross income and outgo, but the bond yield with net incomes.

We have, then, to inquire how it came about that Wicksell, for the first time in economic theory, introduced the bank rate of discount as a separate functional factor relative to marginal productivity and the average movement of commodity prices. Ricardo, wishing to get behind the superficial phenomena of money and credit, resorted to the man-hour system of measuring the social income of consumption goods and the net income for capitalists as determined by the margin of cultivation. Writing at a period before the steam engine had begun to show its productivity, he placed greater weight upon the pressure of population, and therefore, with him, the net income of profit, including interest tended towards a minimum below which the employer could not afford to expand the production of goods. This minimum was the net income at the margin of cultivation, and, since competition and substitution tended to equalize profits over the entire field, there

remained for the landlords who owned the more productive pieces of land 626
a differential net income - the rent of land - over and above the net income for capitalists as determined by no-rent land at the margin of cultivation. This differential rent of land tended to increase as the marginal net income decreased by pressure of population towards lower margins.

Karl Marx, fifty years after Ricardo, gave more weight to machinery, which he now converted into a "constant" quantity, measured by the man-hour-price, and, at the same time, eliminated Ricardo's differential net-income, rent, by averaging it with profits and interest, and giving to this average the name surplus value. But by surplus he meant net income, and by value he meant its measurement in man-hours. Hence we have, with Marx's productivity of machinery, an increasing net income for all capitalist owners, the gross income being enlarged by the two dimensions of greater efficiency and longer hours, the gross outgo for labor's necessities being decreased by the lesser number of man-hours per unit required to produce it.

Thus these man-hour metaphors of price turn out to be measurements of efficiency. Taking the nation or society as a whole, Ricardo pictured an average decrease of efficiency owing to lower levels of output per man-hour, and Marx pictured an average increase of efficiency owing to the introduction of machinery, and therefore higher levels of output per man-hour. According to Ricardo's metaphor the man-hour-prices are increasing, because more man-hours per unit of output are required to produce commodities. According to Marx's version the man-hour prices are diminishing, because less man-hours per unit of product are required in the exchange with nature. Abandoning the metaphor, we have, without machinery, Ricardo's diminishing average efficiency with the increasing pressure of population. But with Marx we have an increasing average of efficiency with the increasing use of

machinery. In the Ricardian case the diminishing efficiency was the marginal efficiency of least productive lands, so that the higher efficiency of labor on the more productive land left both a larger gross and a larger net income, and the difference between this larger net income and the smaller marginal net income was rent. But in the Marxian version the increasing average efficiency all round created a larger gross income, and the differential net incomes going to profits, interest and rent were merged by averaging.

When it came to John Stuart Mill we avoided the metaphorical man-hour system of measuring prices, and stated his prices and costs of production in terms of metallic money. But this created no new variable quantity, because the value of his metallic money had already been equalized with the man-hour-price of producing it. His really new variable was bank credit whose movements he described quite accurately. But this bank credit system of money had, with him no functional relation whatever with his metallic money and its equivalent man-hour system of measurement. It was a purely psychological theory of optimism and pessimism,¹ whereas his metallic money system was a purely physical man-hour system of efficiency. There was no possible unit or functional interaction of the two. They were as different as hope and labor, or fear and physics.

When next it came to Bohm-Bawerk, some forty years after Mill and twenty years after Marx, we have a new psychology, added to the old technology of Ricardo, Marx and Mill. This new psychology is not, however, Mills' bank-credit psychology of optimism and pessimism, which Bohm-Bawerk also disregarded as an excrescence, it is the

¹ Mill, J. S., Elements of Political Economy, Chap. ?

hedonistic psychology of underestimate of the future that goes along with physical productivity itself, and this therefore leads Bohm-Bawerk to distinguish interest from both profits and rent. Interest is a time-interval phenomenon of underestimate of the future, but profits and rent are time-flow phenomena of business management and the uses of land. But, along with this psychological explanation of interest, yet entirely independent of it, was the same technological productivity which Ricardo, Marx, Mill, and Bohm-Bawerk himself, had measured by man-hours or its equivalent metallic money. Thus the psychological explanation and the technological explanation, for Bohm-Bawerk, were not functionally interdependent, any more than the were with J. S. Mill. They were cumulative, or alternative, as they were with Mill. Instead of a change in one factor, the underestimate of the future, causing a change in the technological factor, on the ground that they act and react on each other, a change in one merely adds to, or subtracts from, or may be substituted for, the change in the other factor.¹

Here it was that Wicksell, a dozen years after Bohm-Bawerk, introduced the idea of a functional interaction, instead of cumulative addition or subtraction of three factors, the psychological bank credit disregarded by Mill and Bohm-Bawerk as a psychological cycle of optimism and pessimism; the physical productivity of Ricardo, Marx, Mill, and Bohm-Bawerk; and the psychological underestimate of future pleasure of Bohm-Bawerk. It was the latter psychology, along with physical productivity, that furnished Wicksell with his concept of natural interest, but it was Mills' psychology of optimism and pessimism that furnished him with the functional idea of the bank rate of discount.

1 Bohm-Bawerk, Positive Theory of Capitalism, tr., 273 ff.

Substituting, as we propose, the bond yield as the measurable index of Wicksell's marginal productivity, we have to revise our original statement of his position as follows. If the bank rate is reduced, by concerted action of banks of issue, below the bond yield then the average of commodity prices will tend to rise; if raised above the bond-yield the average of prices will tend to fall; if equalized with the bond yield the average of commodity prices will tend toward stability.

The functional relation here described turns on Wicksell's two concepts of a highly elastic magnitude of technological capital and the functional relation between borrowing and buying.

The elastic magnitude of technological capital turns on the concepts of investment, bond yield, bank rate and marginal productivity. Technological capital, instead of being something fixed and durable, is highly responsive to the attitude of capitalists, investors and bankers. This physical capital is not the external visibility of the physical equipment, but is the expansion and contraction of the use of the equipment, and the expansion or restriction of extensions and new construction, as well as the increasing or decreasing output of industry. These expansions and contractions always occur at the margins of the least profitable parts of a business or among the least profitable enterprises.

Thus it is to be noticed that Wicksell, in his analysis, is always dealing with the marginal product or the marginal producer, not in the technological sense but in the value sense. Consequently, the price effects of changes in the money rates are very gradual, and perhaps imperceptible, until a period of time has elapsed. The effects are pointed out as occurring on the least profitable money values of the products of all business undertakings. If the bank rate rises

relative to bond-yield, only the least profitable branches of industry are curtailed, and if the bank rate relatively falls, then it is these least profitable branches that are enlarged. Similar marginal reasoning would hold for the more profitable branches of the same business. With a high bank rate relative to bond yield the sales would be more cautiously expanded if not curtailed, and the ability of buyers to pay would be more carefully scrutinized. But with a relatively low bank rate these marginal cautions would be relaxed.

Thus we have a picture of minute increments of change in the expansion or contraction of production correlated with the relative movements of bank rates and natural rates, a set of changes which could scarcely be noticed statistically for industry as a whole until a measurable period of time had elapsed. Wicksell intimates that this period might be a year or more. The statistical validity of this theory requires further investigation. Evidently, however it is a picture of what would be expected from our knowledge of the transactions between bankers and their customers. The banker will say that by raising his rate of interest from 5 per cent to $5\frac{1}{2}$ per cent his customer will curtail only those more risky parts of his enterprise which probably ought to be curtailed anyhow. His theory is in harmony with Wicksell's theory.

The matter, however, becomes more subtle at the hands of Wicksell on account of his introduction of a theory of relativity between bank interest and natural interest. The banker thinks in terms of the absolute rise or fall of interest rates and of the very slight difference in costs of production on account of the small share that interest payments bear compared with the total costs of production. A rise of interest from 5 per cent to $5\frac{1}{2}$ per cent is only a 10 per cent increase in a factor, which may itself be only 2 or 3 per cent

of the total cost of production. But, if we follow Wicksell's analysis, a rise of 10 per cent in the rate of interest becomes, relatively, a 22 per cent rise if the natural rate is falling from 5 per cent to $4\frac{1}{2}$ per cent. And, since the borrower is speculating on his forecast of the future rise or fall in the price of his product, which means a rise or fall in his expected gross income, and since he is speculating on narrow margins, then a fall of even only 1 per cent in the expected price of his product may, perhaps, reduce his net income 50 per cent or wipe it out altogether, depending on the relation which gross income bears to net income in his particular enterprise. Since it is net income and not gross income that he is concerned about, and since this is money income and not goods income, then there may be a cumulative effect if money interest rises 10 per cent when both natural interest is falling 10 per cent and prices of finished product are also expected to fall. All of these expected cumulative contingencies, operating upon the narrow margins of competitive business and the great difference between gross income and net income are provided for in Wicksell's theory of the relativity of bank interest, natural interest and prices of commodities, acting functionally with each other as independently variable quantities.

Substituting then the bond yield for marginal productivity, if the average bond yield is low, indicating an abundance of investment funds, then the bonds will sell at high prices; these high prices of bonds will increase the quantities of labor and materials that can be purchased, at existing wages and prices, for extensions and new construction; the total social investment measured in quantities of labor and materials, is thereby increased; and an increasing output of product will eventually ensue.

If, now, at the same time when the bond yield is low and the

prices of bonds are high, the bank rate is made yet lower than the bond yield, the same tendencies will be accentuated. Stimulated by this still lower bank rate, the borrowers are induced to enlarge the amount of their short-time borrowings for immediate delivery of finished products, at the expense of their long-time borrowings. These larger short-time borrowings have the same effect as the high prices of bonds, for they enable the borrower to increase his demand for labor and materials. This tends either to raise wages and prices, or to increase the quantity of labor and materials purchased, if prices and wages do not immediately rise. In the latter case an increasing output shortly ensues.

But if, on the other hand, while the bond-yield is low, the bank rate is raised above the bond yield, then the bank rate tends to counteract the bond yield. Borrowers are inclined to borrow less money at the banks and to put more money in investments, and thus either prices do not tend to rise or quantities of output do not tend to enlarge, as they would have done when the bank rate was below the bond yield.

Carrying the same reasoning throughout, it is not the absolute rise or fall of the bank rate that affects the average movement of prices, it is the relative rise or fall compared with the bond yield. If the bond yield is 5 per cent then a bank rate of 4 per cent is a low rate and will initiate a tendency towards a rise of the average of commodity prices. If the bond yield falls to 3 per cent then the same bank rate of 4 per cent is a high rate and will initiate a tendency towards a fall in commodity prices.

Here will be seen the significance of Wicksell's introduction of the functional relation between borrowing money and buying goods, a relation quite familiar to all business concerns, but not made use of

in the theories of the classical and hedonic economists. They had eliminated money as a mere "form," a "medium of exchange" having no effect on the exchange-values previously determined in the processes of production, pleasure and pain. But money, says Wicksell, is not a mere difference in "form" where it plays only a passive part, but is a difference in "reality," with money playing an active part.

The classical and communistic economists' supposition that money played a passive part, merely as a convenient means of exchange in transferring goods, not different from a highway as a means of transporting goods, and that therefore the rate of interest could be pictured as merely a "natural" rate payable in another universal commodity, money, might have been close to reality if their assumption was true that money was simply one form of a commodity, gold or silver, whose value was determined and measured by the same man-hours of labor-power that determined and measured the value of the other commodities. But with a bank-debt system of money substituted for a metallic system of money, the bank rate of interest may and does change differently from the changes in their assumed "natural" rate as determined by the marginal productivity of capital. In other words, Wicksell here makes the shift from the original concept of interest as a payment of physical goods for the use of physical goods (in natura) to a stipulated or contract rate of interest as a payment of bank debts for the use of bank debts, wherein this bank rate of interest does not always coincide with their natural rate of interest,¹ and its lack of coincidence is reflected in the changes in prices and quantities of product.

Yet it is in this very shift that will be found our difficulty

1 Wicksell, Ibid., 124, 125.

in making use of Wicksell's concept of natural interest determined by marginal productivity. He himself admitted that there are no statistics of marginal productivity.¹ But we inquire further, Why was it that he did not look towards the concept of bond yield as the statistical measurement which he needed? We ascribe this neglect to the transitional position which he occupied between the classical or communistic economists, whose concept of interest was a physical productivity concept, and the institutional economists whose concepts are bargaining concepts arising from transactions and the institutions of property, banking, credit, and from the accompanying psychology of futurity. Yet it is inexplicable that Fetter, while rightly rejecting the marginal productivity aspect of Wicksell's theory, should have missed Wicksell's far more essential doctrine of relativity of different interest rates. Fetter, in his criticism of what he calls "Wicksell's startling doctrine of discount policy,"² directs his attention solely to that half of Wicksell's doctrine where the bank rate is supposed to be lower than the natural rate, and agrees with Wicksell that this situation would cause a general rise of prices. Then he assumes that Wicksell intended that the money rate should always be kept lower than the natural rate, in which case there would ensue a "constant bank credit inflation and a constant rise of prices, in turn creating a motive for more commercial loans, ad infinitum, just as in the case of Russian and German paper money inflation." Fetter overlooks the other half of Wicksell's doctrine. The rise of prices can be stopped and even a fall in prices can be brought about by raising the money rate above the natural rate.

¹ Wicksell; *Ibid.*, 153.

² Fetter, Frank A., "Interest Theory and Price Movements," Proceedings Amer. Econ. Assn., Mar. 1927, p. 62, 98.

A better understanding of Wickcell was shown by Fisher in his reply to Fetter,¹ where he approved of Wickcell's doctrine that reducing the bank rate below the natural rate would tend to cause an inflation of credit and a rise of prices, but pointed out that by raising the money rate above the natural rate there would ensue a contraction of credit and a fall of prices; and, by keeping the discount rate "in tune with other rates" the tendency would be to maintain a stable level of the average of prices. Wickcell, "more than anyone else," said Fisher, had made the "valuable contribution" to money theory "that, except for the gold reserve, the price level in a community where the deposit currency rules the price level, would be entirely at the mercy of the discount policy of bankers."²

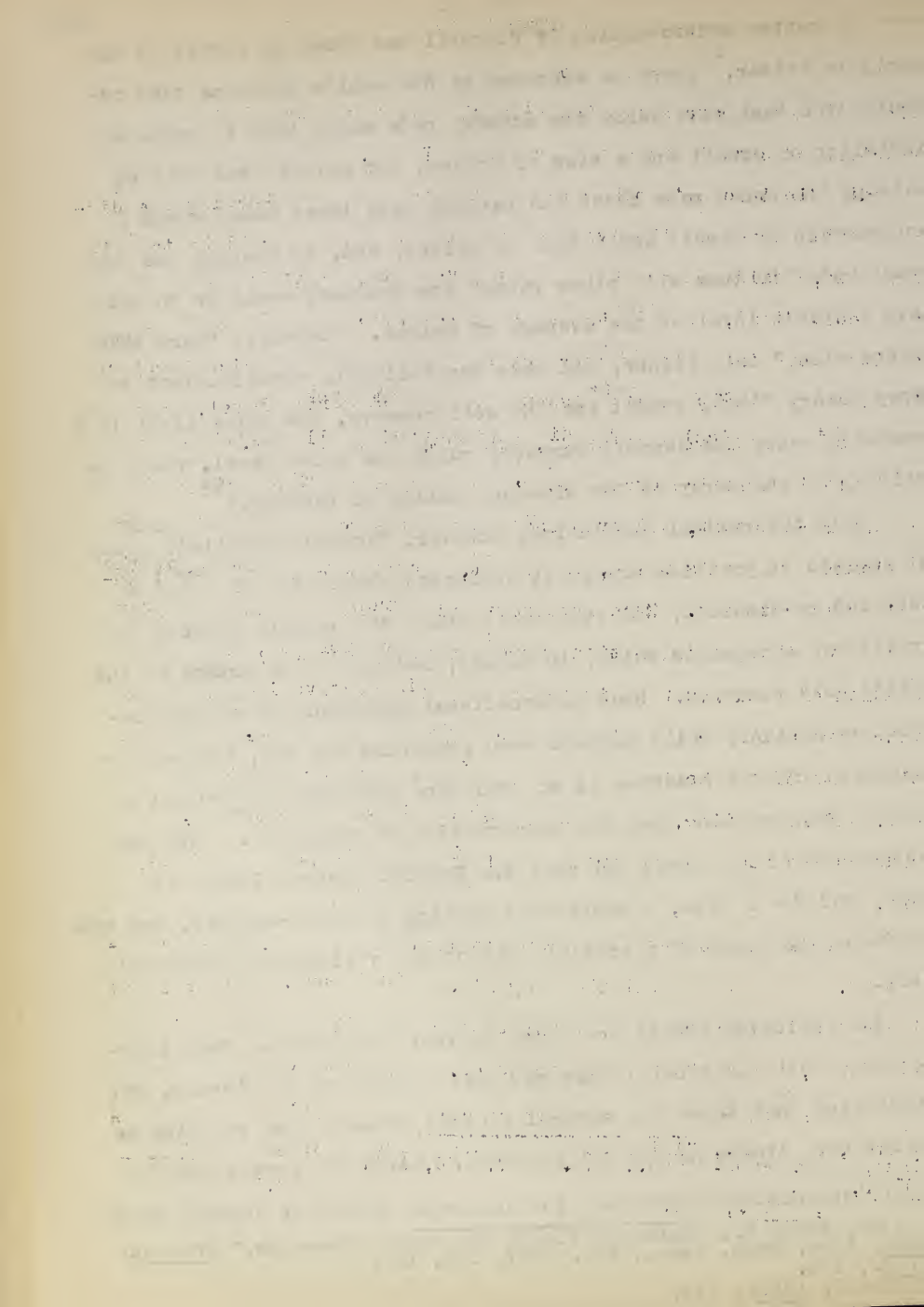
This theoretical conclusion, however, Wickcell admitted, could not operate in practice except by concerted action of all banks of issue and re-discount, and even so it could not operate without international agreements which, in effect, amounted to a pooling of the world's gold reserves. Such international agreement he rightly regarded as unlikely while nations were preparing for war, because accumulation of gold reserves is an even more effective instrument of military preparedness than the construction of armaments.³ Yet the developments of the World War made the Federal Reserve System in effect, and for a time, a world-wide pooling of gold reserves, and this affords us the means of a partial test of the validity of Wickcell's theory.

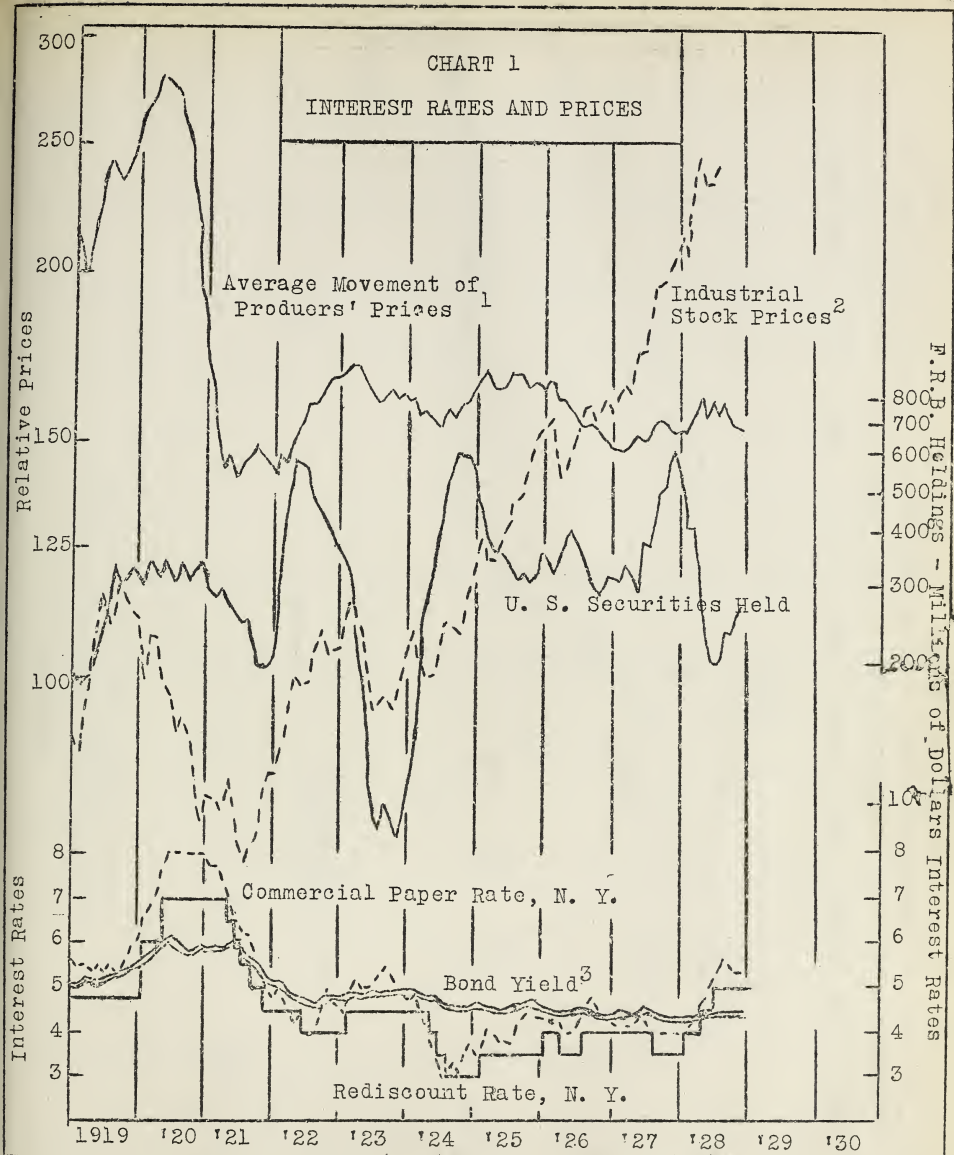
The following charts are drawn to test his theory. They indicate that, while in general they may give support to his theory, yet it indicates that there are several factors present some of which he provided for, others he had not foreseen. Among the former are the lack of international agreement for concerted action of central banks

1 Fetter, Frank A., "Interest Theory and Price Movements," Proceedings, Amer. Econ. Assn., Mar. 1927, 106, 107.

2 Ibid., 108.

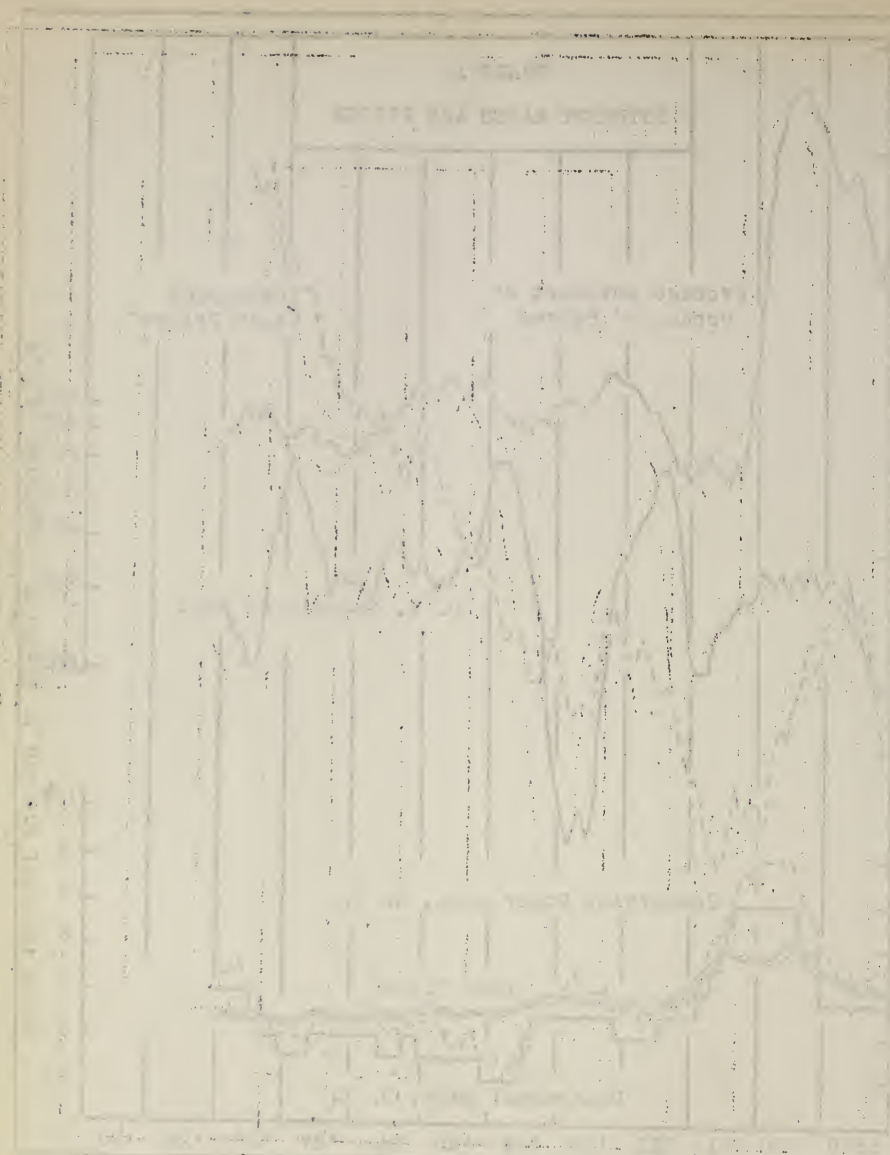
3 Wickcell, Ibid., 179.





¹ Population Weighted wholesale prices; 1913 = 100.

² From Standard Statistics Co.; 1917-19 = 100. ³ 15 municipal, 15 public utilities, and 15 railroad bonds from Standard Statistics Co.

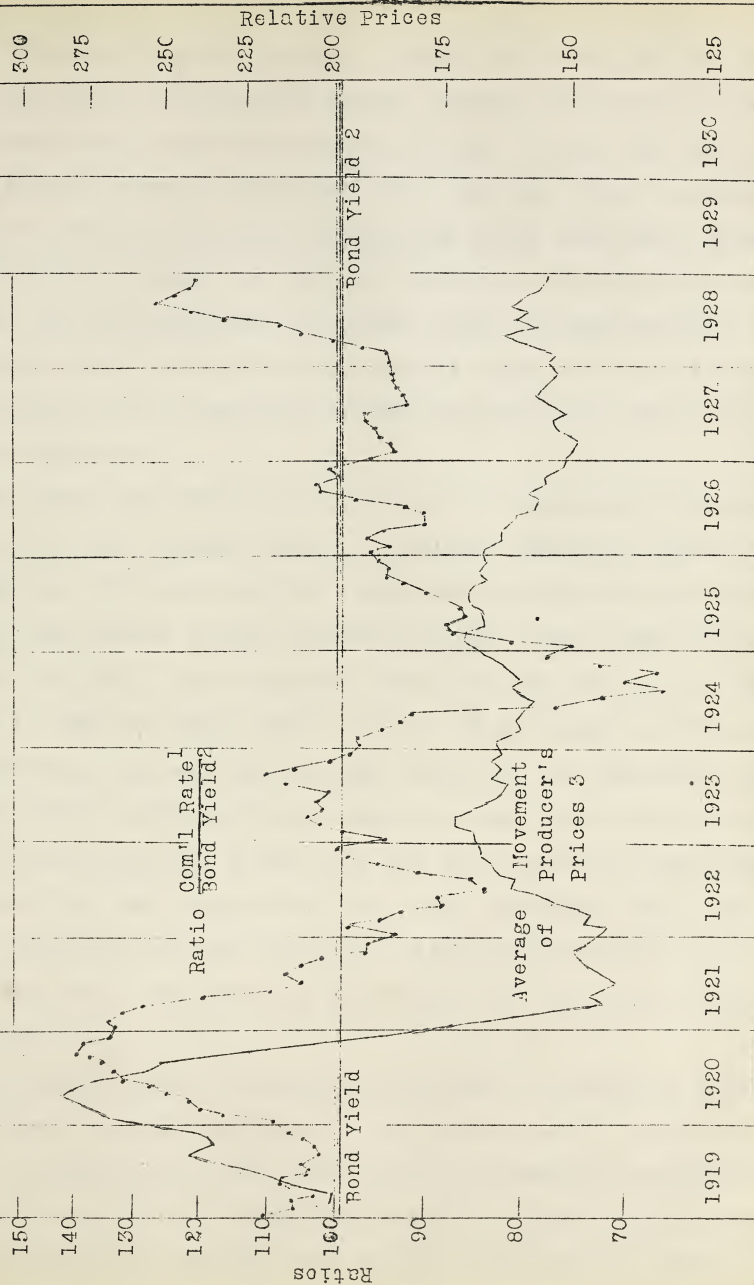


Source: Bureau of Meteorology, Department of the Interior, U.S. Geological Survey, 1900-1909.

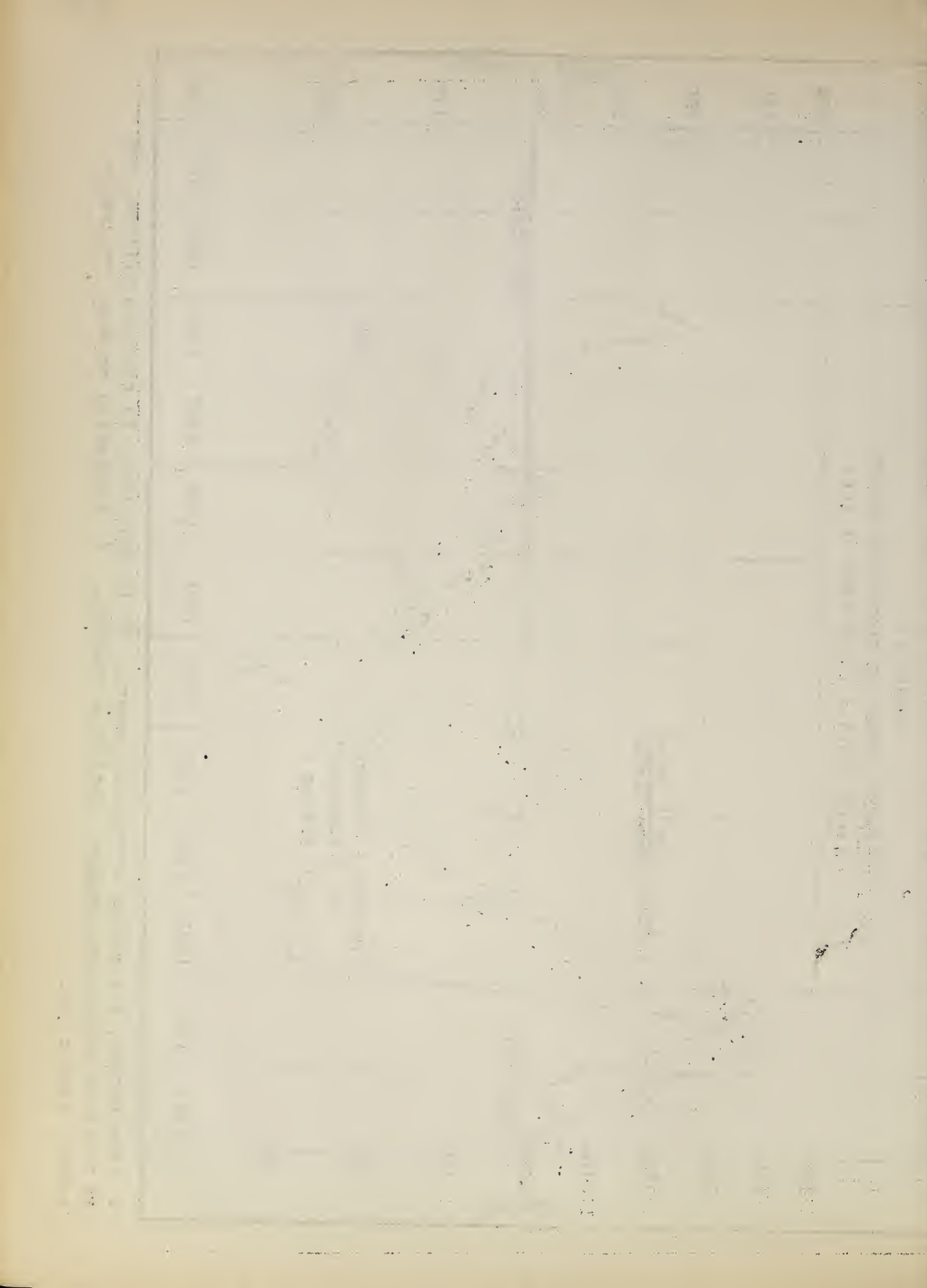
CHART II

INTEREST RATES AND COMMODITY PRICES

(Bond Yield = ratio base of 100)



1 Open market, 4-6 months commercial paper. 2 15 municipal, 15 public utilities, and 15 railroad bonds from Standard Statistics Company. 3 Population weighted wholesale prices; 1917 = 100.



and the struggle for gold reserves. Among the latter are the shifting of bank credit to the stock market, causing inflation of stock prices instead of a rise of commodity prices. Others are the important difference between customers' rates and open rates at commercial banks, new practices of great corporations which make them independent of the commercial banks; and the new importance of open market purchase and sale of securities by central banks as supplementary to his changes of the discount rate. Besides these are to be allowed uncertainties in the computation of the statistics on which the chart is constructed.

The curve indicating bond yield is the showing of 45 municipal, public utility and railway bonds. It begins, (Chart I) immediately after the war, at 5 per cent but rises rapidly to 6 per cent in 1920 and 1921, then starts a rapid decline to 1922, then a rise to nearly 5 per cent in 1923, then a gradual decline to the low point of $4\frac{1}{4}$ per cent in 1927 and 1928, then a rise to $4\frac{1}{2}$ per cent in 1928 and 1929.

Meanwhile, in only two periods, 1920-1921 and 1928-1929, was the Federal Reserve re-discount rate above the bond yield rate of interest, and, for practically all of the time was the commercial open market rate higher than the re-discount rate. The customers' rate, not shown because statistics are not available, although applicable to a greater part of the loans, was doubtless not subject to the extreme fluctuations of the open rate.

The significance of changes in holdings of government securities by the Federal Reserve banks may be realized when it is noted that a purchase of securities on the open market increases by approximately that amount the credit of member banks at the Reserve Bank; whereas a sale of securities reduces their credit at the Reserve Banks. And under the system of pooling the gold reserves, it is not gold that

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constitutes member bank reserves - it is the balance of reserve indebtedness to member banks. Hence the limit placed on member bank reserves, averaging about 10 per cent of their demand liabilities, permits them to loan to business customers about 10 times as much commercial credit as their own credit balance at the Reserve Banks. Hence a purchase of 370 millions of securities, as in 1922, tends to increase the lending capacity of member banks by over 3 billion dollars and the sale of 520 million as in 1922 and 1923, tends to reduce the lending capacity of member banks by over 5 billion dollars.

The movement of prices now can be compared with these changes in rates and open market operations. The Federal Reserve System, owing to post-war financing, was not at first able to assume any responsibility for inflation of prices. The rediscount rate was kept below the bond-yield rate; member banks borrowed in large amounts; business customers were stimulated to borrow, and prices moved rapidly towards the peak in 1920. Then the reserve ratio of the Reserve banks had approached its legal limit of 40 per cent, and the rediscount rates were necessarily advanced, in order to protect the reserve ratio, much above the already increasing bond yield rate, until commodity prices and production reached the bottom in 1921.

Forthwith, in 1922, the twelve Reserve Banks, without concerted action, shifted their surplus to investments in securities, and with the low rediscount rates and the enlarged reserves of member banks, commodity prices again rose almost as rapidly as in 1919. Here, for the first time, the Reserve System assumed responsibility. Purchases and sales of securities were concentrated in a single committee, and this committee began its drastic sale of securities in 1922. Finally, at the beginning of 1923, the rediscount rate was advanced at two of the Reserve banks. Apparently the sale of securities had far more

effect in checking the rise of prices in 1923 than raising the rediscount rates, which continued to remain below the bond-yield rate. Prices fell steadily until the middle of 1924, but, at the beginning of that year the System began huge purchases of securities, and, this time used its rediscount rate vigorously, reducing it to 3 per cent while the bond-yield rate was $4\frac{3}{4}$ per cent. Commodity prices started upward in the latter half of 1924, but meanwhile the sale of securities began to have effect and prices started to fall until they reached the low point in 1927. Then, again the process was repeated. Securities were purchased and the bank rate was lowered.

But now a new phenomenon came actively into play. The caution of the general public and the enormous profits of corporations, turned the low rates and augmented credit into the stock market more than into the commodity markets. In order to counteract this stock market inflation the Reserve banks sold securities in 1928 and raised the rates of rediscount, for the second time, above the bond-yield rate, reaching the high level of 5 per cent while the bond-yield rate was rising to only $4\frac{1}{2}$ per cent. Thus the working out of Wicksell's theory was interrupted by the policy of using his theory to depress stock prices instead of stabilizing commodity prices.

This brief discussion confirms, in a general way, Wicksell's theory of concerted action. No such stabilizing results as above depicted could have been brought about by independent action of 10,000 banks, each holding its own gold reserve. And even then, no such stabilizing results could happen until the twelve reserve banks yielded to a central committee the purchase and sale of securities, and the uniform control of rediscount rates.

In this case foreign banks of issue were compelled to follow the lead of the Reserve System, which held the bulk of the world's monetary gold. In so far the situation corresponded to Wicksell's assumption of a world pay community. But other factors came in. Open market operations seem at times to be more effective than changes in bank rates. In 1928 it developed that the Reserve System had lost a large part of its former control because private corporations and the private savings of the public went into the stock market rather than the commodity or bond markets. And finally, Wicksell had not allowed for this shifting of savings or of bank credit from the commodity and bond markets to the stock market. This phenomenon of shifting could not be cared for in his theory of marginal productivity. But in the case of the bond yield rate of interest it is quite evident. There is a sympathetic relation affecting all these loan markets, whether on commodities, bonds, or stock shares, whereby the rise or fall of one of the rates of interest produces a substitution of one kind of investment for another kind, thus keeping the several rates more or less "in tune." While Wicksell gave a new theoretical clue to the stabilization of the average movement of prices by means of his concerted action of a World Pay Community, yet in its practical application and in the test of its validity, many more factors must be included than those which were apparent in 1898.¹

VI. Efficiency and the Value of Gold

1 For further discussion see Hearings on H. R. 7895 (1927) and H. R. 11806 (1928) before the Committee of the House of Representatives on Currency and Banking. Government Printing Office, Washington.

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EFFICIENCY AND THE VALUE OF GOLD

John R. Commons
(To be revised. February, 1929)

1. Producers, Sellers, Buyers

The first assumption that naturally occurs to anyone who considers the astonishing increase in efficiency of American industry and agriculture is that the law of supply and demand should be expected to bring about a corresponding fall in prices. If the efficiency of, say, the steel industry, or the wheat-growing industry, increases ten per cent in ten years, by which is meant that the same amount of capital, labor, and management produces ten per cent larger output in a given time, then we should naturally expect prices to fall, on the average, about one per cent per year, or ten per cent in ten years.

These figures are taken arbitrarily, for illustration. The Federal Reserve Board estimated a much larger increase in efficiency of manufacturing industries from the year 1919 to the year 1927 - an increase of 47 per cent in efficiency, averaging, therefore, five per cent per year. But, taking our figures for illustration, consider what would happen if both steel-efficiency and wheat-efficiency increased together at the same rate of ten per cent in ten years, and that the money prices of each declined ten per cent during that ten years.

We may enlarge the supposition. Suppose that steel stands for all manufacturing industries and that all of them increase their efficiency equally at the same rate; and that wheat stands for all agricultural industries, all of which also increase their efficiency

equally at the same rate. All of the farmers, now, are selling all of their agricultural products to all the manufacturers, and the manufacturers are selling all of their manufactured products to all the farmers. Prices for everything have fallen equally 10 per cent.

But have exchange values fallen? This is the distinction between "nominal" prices and "real" prices. Nominal prices are the amount of money which a unit of the commodity will bring. Real prices are the amount of other commodities which it will buy. The nominal price is the one which we name simply price. The real price we name exchange-value. This is because money, by which nominal prices are measured, is only a selling and buying medium through which we obtain ownership of the other commodities and services which we really want, in exchange for our own commodities.

Hence instead of saying that we "buy money" with our commodities, we say that we are "selling goods for money." And instead of saying that we are "exchanging money" for commodities, we say that we are "buying goods with money." The real prices, or exchange-values, are not known until we first sell our commodity for money and then start out to buy any or all of the other commodities we need. Hence we name the quantity of another commodity which we obtain for our own commodity, not the "price" of our commodity, but its exchange-value. And we name the quantity of money which we obtain for our commodity, not its exchange-value, but its price. Exchange-value is the "real price." Price is the nominal price.

So it is with wages, profit, interest on investment and rent of land. Here, however, the "commodity," as we so call it, which we own, we do not sell. We sell only the use of it during a period of time. It is this use that is the true commodity which we sell. In the case of labor and investment we call it a service- the service of working

and the service of waiting. Nominal wages are money wages, that is, the price obtained by selling labor-service or the use of labor-power, for money, during an hour, day, week or piece. Nominal wages are the price of labor.

But real wage, or the real price for the use of his labor-power, is the food, clothing and other goods which the money wage will buy. We call them "real wages" but they are the same as what we here call the exchange-value of the service of working for others.

Likewise nominal interest is the amount of money which an owner of money receives for the use of his money as an investment during a period of time. It also is a payment for a service - the service of waiting. He who gets paid for this service of waiting is the investor who buys mainly bonds with his savings. On the money market this is named the "price of money" or the "value of money." It is the nominal, or money rate of interest, that is, the nominal price paid for the service of waiting. But the real rate of interest, or the "real price" paid for the service of waiting is the quantity of goods which the investor can buy with the money which he receives as nominal interest. This quantity of goods is the real price, that is, the exchange-value, of his service of waiting.

Also with profit. Nominal profit is the amount of money which a business establishment receives during a period of time after paying nominal interest, nominal wages and all other prices. It is the nominal price received from the public for the service of managing a business. But real profit is the quantity of all goods which this nominal profit will buy on the markets. This real profit is the same thing as the exchange-value of the service of managing a business.

So with rent and hire. Nominal rent, or hire, is the price received, over a period of time, for the use of lands, buildings, horses, or any physical thing. But real rent is the quantity of goods

such nominal rent will buy. Real rent is the same thing as the exchange-value of the uses of physical things; but nominal rent is the price paid for the use of physical things.

In general then, prices are the nominal values, or nominal incomes, received by all sellers of commodities, services and uses, but exchange-values are the real values, the real incomes received by such sellers.

Yet while prices are "nominal" and exchange values are "real," prices are very real in another sense - they determine who shall get the results of efficiency.

If, then, to go back to our supposition, if the prices of all commodities have fallen equally ten per cent, have the exchange-values, or real prices, fallen ten per cent? No. They remain exactly where they were. A bushel of wheat exchanges for exactly the same quantity of manufactured products as it did before, and a suit of clothes exchanges for just the same quantity of agricultural products as it did before. There has been a fall of ten per cent in money prices of both agriculture and manufactures, but no fall in exchange-values between agricultural products and manufactured products.

Shall we say, then, that it makes no difference what the level of prices is, or whether the level changes? We might apparently say it would make no difference in our supposed case. But take an opposite supposition. Suppose, while efficiency increased equally ten per cent for all commodities, yet the level of all prices is rising ten per cent, instead of falling. There would still be no change in the exchange-values of manufactures and agriculture. The prices would be ten per cent higher, but a bushel of wheat would buy the same quantity of manufactures, and a suit of clothes would buy the same quantity of agricultural products. The difference would be that all prices would be ten per cent higher, by which is meant either that both wheat and

clothing would buy ten per cent less money, or that ten per cent less money would buy the same quantity of wheat or clothing.

If it made no difference in exchange-values between manufactures and agriculture when all prices fell ten per cent, it likewise made no difference in exchange-values when prices rose ten per cent. But who got the increase of ten per cent in efficiency?

Take another supposition. Suppose, when efficiency all round increased equally ten per cent, there was no change in prices. Wheat therefore buys the same number of dollars as before, and the same number of dollars buys the same suit as before. Consequently, when the price-level remains stable the same thing happens to exchange-values as when money prices rose ten per cent or when money prices fell ten per cent. But who now gets the ten per cent increase in efficiency?

When all prices fell ten per cent and all efficiencies increased ten per cent, to whom did the increased efficiency go? We must, apparently, distinguish between producers and consumers. This is the usual way of talking. Some are producers, others are consumers. But it does not fit the situation. In our supposed cases all farmers and farm laborers and all manufacturers and manufacturing laborers are both producers and consumers. Our distinction must therefore be, not between producers and consumers, as though they were different persons, but between, let us say, the producing-selling function and the buying-consuming function of the same persons.

This distinction is important. Does the increase in efficiency go to the millions of participants in their producing-selling function or in their buying-consuming function? Let us look at the three different situations above supposed respecting prices. Take the first case. If all prices fell ten per cent while all efficiencies were increasing ten per cent, would it be as selling-producers or as buying-

consumers that the farmers and farm-laborers, the manufacturers and factory laborers, obtained the ten per cent gain in efficiency? Evidently, what happens would be that each side would gain, not by its own increased efficiency, but by the increased efficiency of the other side of the transaction. And each side would lose the gain that might have come from its own increased efficiency. They come out even, in this supposed case, because each side gains from the increased efficiency of the other side just as much as it loses, by the fall in prices, from the failure to gain the increase of its own efficiency. In other words, when prices are supposed to fall as much as efficiency increases, then each side gains in its buying-consuming function as much as it loses in its producing-selling function.

Take the opposite extreme, where, supposedly, prices increased equally ten per cent while efficiency all-round increased also ten per cent. The exchange-values, as we saw, remained the same, but prices all-round rose ten per cent. Which function got the gain from the increased efficiency, and which function lost out? Evidently the producing-selling function got two gains. It got a gain of ten per cent on account of increased efficiency, and it got another gain of ten per cent on account of the rise in prices. Its total gain was twenty per cent. On the other hand, the consumer-buying function suffered a loss of ten per cent because prices were supposed to rise just that amount, and therefore a given amount of money available to buyers would purchase ten per cent less commodities than before. But, as sellers they had obtained ten per cent more money with which to buy. Hence, again, everybody came out even, since everybody was both producer-seller and consumer-buyer. But which function got the gain from increased efficiency?

Here, again, we must split our producer-seller function into

its two parts. The producer-seller function got two gains, a ten per cent gain from increased efficiency and a ten per cent gain from higher prices. This means that it got a ten per cent gain by means of its producer function and another ten per cent gain from its seller function. There was nothing whatever to offset or deduct from this ten per cent gain in efficiency as a producer. That was pure net efficiency-profit or efficiency wages. But there was an exactly equal offset to its gain as a seller function.

Here, we must make a further distinction between two kinds of consumers. There are ultimate consumers and there are business consumers. The ultimate consumer is the last buyer; the business consumer is an intermediate buyer. The association of manufacturers who bought steel for their production of machinery and farm implements called themselves "the Association of Rolled-steel Consumers." But they were not consumers; they were producers. They had organized in order to obtain the privilege of paying lower prices for the semi-finished steel products which they needed, not for consumption, but for further production into finished products. Hence, to be exact, they should be called buyer-producers, instead of buyer-consumers. We shall consider them here as buyer-producers.

Thus producers can enlarge their profits in three directions: first, as sellers by raising the prices of their product; second, as buyers by reducing the prices paid to others for materials and labor; or, third, as producers by increasing their efficiency.

For the purpose of measuring these three methods of increasing profits and wages we need two systems of measurement. For the first and second methods of raising and reducing prices our unit of measurement is the dollar. For the third method, by the increasing efficiency as producers, our unit of measurement is the man-hour. The first and

second methods depend on the relations of supply and demand, that is, upon the relative scarcities of commodities, and our measure of relative scarcities is the dollar. The third method depends upon increasing the quantity of products produced by the same quantity of labor, that is, upon increasing the efficiency of labor and management, and our measure of relative efficiencies is the man-hour.

We shall consider these measurements later, but, for the present, we can see how it is that, in our supposition of an equal rise of prices all round, there is the exactly equal offset to the gain from the seller function. This offset came from the ten per cent increase in prices that had to be paid as buyers. Thus, while, as producers, each side gained ten per cent from increased efficiency, and while as sellers, each side gained another ten per cent, yet as buyers each side lost what it gained as sellers, though retaining what it gained as producers.

These five distinctions will be found to be important. I know a business man who started out to show that the sciences of chemistry and electricity could be introduced into business and thereby large profits could be made. His ideal was evidently efficiency profits, and he succeeded immensely. Suddenly he found himself stopping production and laying off his laborers, because he was waiting for an expected bankruptcy and unloading of stocks by the producers of his raw material, after which he might expect to buy his raw material at lower prices. Why did he change from his first ideal of making a profit by increasing efficiency and the production of goods to the different ideal of making a profit by withholding the production and beating down prices of raw material. All business men were doing the same thing at that period of falling prices in 1921. All of them were waiting for each other to be squeezed by falling prices, and so they

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were in much the same position as the famous islanders who eked out a precarious living by compelling each to take in the others' washing. All of them were trying to make precarious profit by going around the circle of taking it out of each other as buyers at falling prices.

Or, when the opposite movement occurred and prices were rising. Then every business man and stock speculator thought he was very smart if he sold at the peak of the market and "got out from under" just before prices began to fall. "Getting out from under" means letting the buyers hold the bag of falling prices. Why was it, then, that in the period of rising prices both employers and wage-earners "laid down on the job" and decreased their efficiency? This we know actually occurred in the year 1919. It was because, as sellers, they were trying to take their profits and wages out of each other, instead of taking it out of themselves as efficient producers. This time it was the precarious circle of taking it out of each other by rising prices.

The third method of increasing profits and wages is the efficiency method, where they do not try the circular process of taking it out of each other by rising prices or falling prices, but they take it out of themselves by increasing their efficiency. For example, take the third supposed situation, where prices remained equally stable and where, as before, exchange-values were also stable. Now, it is evident, neither side gained or lost anything as sellers or buyers. Both prices and exchange-values remained the same. But each side gained as producers - not as buyers or sellers - exactly the amount of gain represented by its own ten per cent increase in efficiency.

Hence we have three possible price situations in our supposed uniform increase of efficiency, and we are called upon to test our first assumption of falling prices with increasing efficiency by each of these situations. The question now takes a different turn. It

is not, What should we naturally expect the law of supply and demand to do to prices when efficiency increases, but, Which price situation should we expect will be the best for all concerned? Is it better all around that the gains from efficiency made by producers should go to other persons as buyers? If so, then falling prices will do it. Or, is it better that, as sellers, the producers should get an additional gain not based on efficiency? If so, then rising prices will do it. Or, finally, is it better that the gains from efficiency should be retained by the producers themselves without gaining or losing as sellers or as buyers? If so, then stable prices will do it.

We have, then, really three questions to answer, an economic, an ethical, and a governmental question. The economic question is, What effect will the unregulated law of supply and demand have on prices when efficiency increases? The ethical question is, What ought to happen to prices when efficiency increases? The governmental question is, Can the banks, if authorized by governments, stabilize the average movement of prices?

We shall not consider here the third question. Of course, it would not be worth while considering the first and second questions if we knew positively that the third could not be answered affirmatively. We do know, however, that, since the war, governments throughout the world, and their central banks, like the Federal Reserve System, have been working on this question of the enormous fluctuations of prices, trying to reduce those fluctuations. We are not now considering anything about whether they can reduce the fluctuations or not. We are only considering what they should take as their guide in administering the credit system of the world. The question is, Should they take the promotion of efficiency as their guide?

2. Public Policy

But this question of efficiency cannot be separated from the ethical question, for the following reason. We may assume as settled that everybody seeks his own self-interest, regardless of the effects on others, in all his economic activities of buying, selling, producing and consuming. This consists in getting as much gain as possible and suffering as little loss as possible. Everybody does this without regard to the effects on other people, unless he is restrained in some way that he cannot overcome. If anybody claims that he is in business for the public benefit we may set it down as buncomb. The ethical question, then, is, Should his largest selfish gain and least loss to self be secured for him as a producer, or as a seller, or as a buyer, or as an ultimate consumer?

There is really only one way in which a person who selfishly seeks his own largest gain can do so without getting something for nothing by taking it out of other people, and that is by increasing his efficiency. If he gains solely by raising his prices or wages paid by other people, his gain comes solely from an equal loss to others as buyers. He not only gets something for nothing, he gets something for less than nothing. The others, then, if they are also producer-sellers, can recoup themselves only in one of two ways, either raise their prices as sellers equal to their loss as buyers, or increase their efficiency as producers equal to that same loss as buyers. If they raise their prices as sellers they, in turn, get something for nothing by taking it out of other people and thereby come out even. If they raise their efficiency but receive correspondingly lower prices then the others take the gains of their efficiency away from them, and they do not come out even. If both sides increase their efficiency but do not raise their prices, then they also come out even, but each

side gets its gain without the intermediate step of taking it out of others for nothing in exchange. Finally if both sides raise their prices, equally, but without increasing their efficiency, then they come out even on the gamble of getting something for nothing out of each other.

The answer to the ethical question would then seem to be, Every person seeking his purely selfish increase of profits or wages should get his largest gain as a producer through increasing his efficiency, and not as a seller gambling on the rise of prices, and not as a buyer gambling on the fall of prices. How would this work out in practice?

The first question is the one previously referred to, How shall we measure the increase in efficiency? It cannot be measured in money. If the former money cost of manufacturing a suit of clothes was \$20, and the money cost is reduced to \$12, we cannot tell whether the 40 per cent reduction in money cost was due to lower wages, lower rates of interest, lower prices of raw material, or to an increase in efficiency. But if, as happened in a certain clothing factory during a period of eight years, the average number of hours of all kinds of manual labor required to make the average suit was reduced from about ten hours per suit to about six hours per suit, then we can say that the labor-cost - not money-cost - was reduced 40 per cent. This is the same as saying, inversely, that the shop efficiency was increased $66 \frac{2}{3}$ per cent.

There are other ways of stating the same thing. Formerly one hour of average labor produced one-tenth of a suit - now it produces one-sixth of a suit. The increase is $66 \frac{2}{3}$ per cent. Or, where formerly six hours of labor produced 60 per cent of a suit, six hours now produces 100 per cent of a suit. This is an increase of 40 per cent of a suit in six hours, which is the same as an increase of

66 $\frac{2}{3}$ per cent in efficiency. One way of stating it is the inverse of the other. If the labor-hours per suit are reduced 40 per cent, then the suits per hour of labor are increased 66 $\frac{2}{3}$ per cent. Either way of putting it is the same as saying that efficiency has increased 66 $\frac{2}{3}$ per cent.

The engineers have a set of terms which express this relation and enable us to distinguish labor-cost from money-cost. The terms are "output" and "input." Efficiency is the ratio between output and input. The input is the number of man-hours, the output is the amount of product per hour. If the input of man-hours per unit of output is reduced 40 per cent, it is the same as saying that the output per man-hour is increased 66 $\frac{2}{3}$ per cent. It is two inverse ways of saying that efficiency, measured by the man-hour, has increased 66 $\frac{2}{3}$ per cent.

Nothing is here said about money, or wages, profits, prices, money-cost or money income. These latter are business problems of the relative scarcities of things. But we are now considering only the producer's technological problem of relative efficiencies of different methods of production. The dollar is the business man's unit of scarcity-measurement - the man-hour is the producer's unit of efficiency-measurement. We measure efficiency by the output of product per input of man-hours; we measure scarcity by the prices or wages paid in dollars. We cannot measure efficiency by prices or wages, nor scarcity by man-hours.

This is the essence of the distinction between producer and seller. The producer is a technologist, an engineer, a manager, a laborer. His problem is, How to increase the output per man-hour of input - that is, how to increase the efficiency of industry and agriculture. But when he becomes a seller he becomes a business man. Now his problem is prices and wages - How to increase the prices received for what he sells, or to reduce the prices and wages which he

must pay for what he buys. Business can make profits in both ways - by efficiency or scarcity. If, solely as producer, the manager and his laborers increase the hourly output of goods per hourly input of labor, then they are the successful producers - the specialists in efficiency. But if, solely as seller and buyer, the employer increases his dollar net income by higher prices received or by lower prices and wages paid, he is the successful business man - the specialist in scarcity.

The two, however, are under the same business control. In which function shall this business control be induced to make the larger profit? Shall it be as producer or as buyer and seller? What bearing does stability of the exchange-value of gold have upon the answer to this question?

But we must first go further in distinguishing producer and efficiency from business and scarcity. It is often said that the great increase in modern efficiency has come from the substitution of machinery for labor, and that machinery displaces labor. But machinery has not been substituted for labor, nor has machinery displaced labor, except temporarily. What has happened is that direct labor has been transferred to indirect labor. The efficiency of agriculture has increased about three-fold in a hundred years. A hundred years ago it required nine farmers' families to support ten families, including themselves. Now three farmers' families support ten families, including themselves. Agricultural efficiency has thus increased three-fold. What happened was that six farmers' families were transferred from the direct production of agricultural products to the indirect production of agricultural products. They now produce coal, iron, lumber, fertilizers, railways, highways, steamships, agricultural machinery, delivery of goods on the produce exchanges, and so on, all of which indirectly produce agricultural products. What happened was that nine families were formerly employed in the direct production of

agricultural products and one family in the indirect production, whereas now only three families are engaged in the direct production, and seven families are engaged in indirect production, or agricultural products. The efficiency of agriculture is not to be measured by the output of direct labor but by the output of both direct and indirect labor. The whole nation has contributed to the increased efficiency of agriculture, just as the increased efficiency of agriculture has released labor for the increased efficiency of the whole nation.

But this applies to the nation as a whole and not to any particular agricultural establishment. The particular establishment buys its agricultural machinery from an implement factory which had bought its materials from other factories and had employed labor to manufacture and transport the implements. What the particular farmer bought was a particular quantity of indirect labor, "stored-up" and furnished to him from preceding industries. And this stored-up labor is employed by him as his share of the nation's indirect labor, along with his own direct labor, to produce his crop of wheat.

This indirect labor, stored up in farm implements, fertilizers and other improvements, depreciates by use or obsolescence and must be replaced by new and more efficient implements, fertilizers and improvements. If it wears out or becomes obsolete in five years, on the average, then he must calculate that he is employing each year one-fifth, or 20 per cent of the total amount of stored-up labor which he obtained from other industries. In order, then, to find how much labor he has actually employed he must add to the number of man-hours of direct labor per year one-fifth of the number of man-hours of labor stored up in his farm implements, fertilizers and improvements.

A set of terms that fits this distinction is "operating labor" and "embodied labor." His embodied labor is the "depreciation" of his farm implements, fertilizers and improvements. If they depreciated 20 per cent a year, on the average, then he employed each year 20 per cent of the total embodied labor which he has on hand. This is the number of hours of embodied labor which he must add to the number of hours of operating labor, in order to find how much labor he has actually employed in producing his crop of wheat. It is his share of the total indirect labor of the nation devoted each year to his crop of wheat, and added to his own direct labor.

Evidently, then, the calculation of increasing efficiency of an agricultural establishment or of a clothing factory is exaggerated if we measure it only by the operating labor. Our divisor - the input of labor - must be increased so as to include, as input, not only the direct, or operating labor, but also the indirect, or embodied labor.

This calculation reduces the apparent increase in efficiency, when the increased use of machinery is taken into account. The above-calculation of 66 $\frac{2}{3}$ per cent increase in efficiency of a certain clothing factory was made on the basis of only operating labor. The increase of efficiency was really less than that because the newly added embodied labor in the form of added machinery was not included in the calculation. Had it been included then the increased efficiency of both direct and indirect labor would have been less than 66 $\frac{2}{3}$ per cent. If the output of direct operating labor per man-hour is increased 66 $\frac{2}{3}$ per cent because the indirect labor embodied in machinery has been introduced, that does not mean that the efficiency of operating labor has been increased that much, because we have not counted the additional amount of labor required to make the machinery. We must allow that some of the labor formerly devoted to the operating

production of steel or wheat is diverted to its indirect production by constructing the steel-producing machinery and the agricultural equipment used in the direct operating production of wheat.

This indirect production by embodied labor is Capital. Its quantity should be measured by man-hours, and then distributed as overhead by adding it to the operating man-hours.

We name this kind of capital, thus calculated in man-hours, Technological Capital, in order to distinguish it from Business Capital, measured in dollars. Business capital is sometimes considered to be the market value of plant or farm and equipment, but this changes with the changes in prices, profits and wages. Or business capital is sometimes the amount of investment, but this changes with the market values of stocks, bonds, and land values, depending on expected profits and rents. Business capital earns interest and profits which are the expected net money income from operation. But technological capital does not earn anything - it is output, not income. The amount of business capital depends upon future prices and quantities of output and this means the expected scarcities of different outputs, measured in dollars. But the amount of technological capital depends upon the past and present quantity and efficiency of all labor, embodied and operating, measured in man-hours.

Hence we have two different kinds of "overhead," the business overhead of interest and customary profits for risk, known as "fixed charges;" and the technological overhead of embodied man-hours, known as "depreciation." Each kind of overhead is becoming enormously important, in proportion as the labor-power of the nation is transferred in all industries from direct labor to indirect labor, that is, from operating labor to embodied labor.

The two, again, are under the same business control. In which direction does public policy suggest that business men should be induced, in self-interest, to guide their establishments? Is it towards enlarging business capital, or towards enlarging technological capital? This means, Is it towards enlarging fixed charges of interest and profit or towards enlarging fixed charges of depreciation? In which direction would stabilization of the value of gold guide the energies of business?

There is still another kind of overhead labor that is increasing in importance. It is the "white collar" overhead. This may be named Operating Overhead, instead of Embodied Overhead labor. All scientists, engineers, managers, clerks, accountants, designers, superintendents, foremen, required to carry on and enlarge the efficiency of industry, are a part of the man-power, which, taken together is named simply Management. The increasing importance of management means an increasing transfer of labor from manual to clerical and managerial labor.

These undoubtedly increase the efficiency of labor, but if they are left out of calculation, as is usually done when speaking of the increasing efficiency of labor, two mistakes are made. It is not mere manual labor that increases its own efficiency. It is mental, managerial and manual labor together that increases efficiency. And they must be counted together, otherwise the calculation of increased efficiency is exaggerated. The "average" man-hour which measures the increase of efficiency is an average of all the manual, mental and managerial labor whether it be operating labor, operating overhead labor, or embodied overhead labor.

And, in computing the average, every individual counts as one, whether it be the general manager or the errand-boy, whether it be

man, woman or child. The fact is, we cannot tell whether the manager is more efficient than the errand boy. We know that he gets more wages, but that is because managers are scarcer, not because they are more efficient. If they were as abundant as errand boys their wages would probably be no higher. All that we know respecting their comparative efficiency is that each is necessary to the efficient working of the concern as a whole. Hence no error is made, that can be corrected, when we count each individual as one--whether manager or errand boy, man, woman or child - in calculating the average number of man-hours required to produce the given output.

With these explanations we return to our clothing factory which increased its efficiency $66 \frac{2}{3}$ per cent when calculated only in direct operating manual labor. But calculated in both operating labor and management and in the embodied labor of depreciation and obsolescence, I have estimated the increase in efficiency in that establishment at $33 \frac{1}{3}$ per cent instead of $66 \frac{2}{3}$ per cent. In other words, the number of man-hours required to make a suit of clothes was reduced in the proportion of ten to seven and one-half instead of ten to six. Thus an increase of $33 \frac{1}{3}$ per cent in the output per hour of average labor of all kinds was a decrease of 25 per cent in the number of hours per suit of clothes. By either calculation the efficiency increased $33 \frac{1}{3}$ per cent instead of $66 \frac{2}{3}$ per cent.

In these calculations an improvement in quality of output is considered equivalent to an enlargement of quantity of output. For the quality also can be calculated in man-hours. If the quality improves without an increase in man-hours, then the efficiency is increased that much. If it required a corresponding increase in man-hours to improve the quality, then efficiency was not increased. A "standard" suit is one in which quality is not changed, and all other garments

and all improvements in quality have been reduced by the accountant of that establishment to an equivalent in man-hours with the standard suit. Thus, by reducing quality to quantity, it is calculated that the efficiency of the establishment as a whole increased $33 \frac{1}{3}$ per cent; or, inversely, the man-hours per standard unit of output were reduced 25 per cent.

Two things happened in the establishment when efficiency was increased $33 \frac{1}{3}$ per cent. The price of the suit was reduced, but not enough to deprive the producers of their gain in efficiency. The physical speed of the workers was not increased, because they had already been speeded up by piece-work, and therefore the increased efficiency came solely from more and better machinery and more and better management. But the second thing that happened was that the hours of labor were considerably reduced, the wages and salaries per hour were greatly increased, and the profits of the establishment were decidedly increased. Had the prices of clothing been reduced 25 per cent when the efficiency increased $33 \frac{1}{3}$ per cent then the buyers of clothing would have obtained all of the gain from increased efficiency, and the producers would not have gained the shorter hours, higher wages, higher profits, and increased interest on increased investment, which came from their higher efficiency.

From the ethical standpoint, which would have been better? The answer turns on the other question previously asked. Where should the inducement to business be placed, in view of the fact that both the producer-sellers and the consumer-buyers are acting upon the purely selfish motive of getting as much as possible for themselves without any sense of duty or obligation towards others, and therefore they would prefer the easier way of taking it out of other people by means of charging higher prices or paying lower prices and wages, instead

of the harder way of taking it out of themselves by increasing their own efficiency?

Those who might answer this question, in the above actual case, by saying that the price of the suit of clothes should have fallen 25 per cent, would be taking the buyer-consumer standpoint that buyers should selfishly take away from producers the gains of efficiency. Those who might answer that the price should not be reduced, would be taking the selfish producer-seller standpoint. Neither side deserves any ethical consideration of justice, or righteousness, or pity, for each is seeking his own self-interest regardless of others. The consumers would take all they could out of the producers by lower prices. The producers would take it out of the consumers by higher prices, or out of the sellers of raw material and labor by lower prices and wages, if they could. The producers would not increase their efficiency if they did not have to, and they would not have to if they could go the easier way of taking it out of consumers by higher prices, or out of the preceding producers of their raw material by lower prices, or out of their own laborers by lower wages.

Seeing, then, that neither side deserves any consideration of justice or ethics, or righteousness, or pity, because each comes into our court of political economy with the same dirty hands of selfishness, the ethical question must be shifted elsewhere. Which is better for the nation as a whole? This is the ethical question. Which is it that the nation as a whole wants, or should want? Should it want consumers to get all the benefits of progress in efficiency? Or should it want the producers to get all the benefit?

Stated in that way, many will be inclined to answer, they should divide the benefit. But there are certain questions. Whose efficiency

shall be divided? How shall it be divided? When shall it be divided? How much of it shall be divided?

We do not need to guess, nor speculate upon the answers, nor let our theory of the law of supply and demand give us the answer. We have experience to go upon. The patent laws are an artificial interference by government with the natural operation of the law of supply and demand. They enable the inventor and the manufacturer, who operates the invention, to keep up the price of the output, by prohibiting anybody else from increasing the supply by means of the increased efficiency to be obtained through use of the invention. The purpose, as agreed upon by the nation represented in Congress, is evidently to give to the inventor and manufacturer all of the gain that they can get from their particular patented increase in efficiency. Their efficiency, as producers, is not divided at all with the buyer-consumers. They get it all for themselves.

But there are certain economic limits imposed by the law of supply and demand. They cannot raise prices above the level charged by less efficient competitors who sell the similar product but do not have the same patented instrument of efficiency. Thus the law of supply and demand continues to operate. It prevents their gain from coming as sellers by raising prices above those of less efficient competitors. They must get their gain solely as efficient producers. The law of supply and demand takes care of that.

But they can reduce their prices if they want to, and if their efficiency enables them to, and thus can drive out their less efficient competitors. They thus determine for themselves how much of their increased efficiency shall be shared, by lower prices, with the buyers as consumers. They evidently use the law of supply and demand also for this purpose, by increasing the supply if they want to do so.

But the patent expires by law, after a certain number of years. Then anybody can use the patented device to increase his efficiency, and the law of supply and demand again operates to bring down prices and thus to turn over to the buyer-consumers all of the gains from the increased efficiency.

There are, of course, imperfections and abuses in the patent laws, but the above is their theory and also the way they mostly work in practice. At first they give all the gains in efficiency to the producer. Then eventually they give all the gains to the buyers. The patent laws do this by controlling the law of supply and demand in four ways. First, by enabling the producer to restrict the supply of the efficiency device. Second, by preventing the producer from raising prices above the level of his competitors who do not have the efficiency device. Third, by permitting the producer to drive out his competitors by increasing his output and reducing his prices and thus sharing his increased efficiency with buyers as much or little as he wishes. Fourth, by depriving the producer, when the patent expires, of his previous control over the law of supply and demand, and thus transferring to buyer-consumers all the gains of the increased efficiency.

Thus it comes about, in the case of patents, that the first thought that naturally occurs to everybody that the law of supply and demand should be expected to bring a fall of prices with increasing efficiency, is true only if we add the public purpose of giving the gains of efficiency solely to producers at first and then gradually to consumers, and if we add also the power of the government to authorize the patentee to control the law of supply and demand for a limited period of time.

It is evident also, from experience, that his own government along does not have the power to authorize the patentee thus to con-

control the law of supply and demand, as seen from the fact that practically all governments have united by treaties or otherwise to give the same patent in all countries to the same inventor or manufacturer. The law of supply and demand is world-wide, under modern systems of transportation and electricity, and there must be a world-wide control of supply and demand if producers are to receive the gains of their increased efficiency.

There are, however, many kinds of improvements in efficiency which cannot be patented. Better lay-out of a factory, better organization of the labor-force, better purchase of materials, better inducements to employees, larger equipment of machinery - these cannot be patented. Here it is evident that not even the seventeen years of a patent are available for producers to realize the gains from their increased efficiency. The gain must be gotten otherwise, without the help of patent laws, and must be gotten from day to day as we go along, and quickly, if possible, before competitors copy the improvements.

But, even here, there are other ways, also enforced by law, by which those day-to-day efficiency gains may be protected and stretched out in time. The law protects trade-secrets. If an employee reveals a secret process to a competitor the law will afford damages against the competitor to the full extent of all the profit which he made by stealing the secret - so careful is the law of the land to make certain that the law of supply and demand shall not operate to prevent an inventor of a process from having the full benefit to his increase in efficiency.

There is still another protection of efficiency - the protection given to the "good-will" and trade-marks of a business. If a manufacturer has acquired a reputation for giving good quality and good service the law prohibits competitors from "stealing" his good repu-

ation by using anything that looks like the name or sign of his reputation. This is really a protection also to efficiency because an improvement in quality is as much an increase in efficiency as is an increase in quantity.

In these ways the public purpose of the nation, through legislatures and courts, shows itself in using all possible restraints and restrictions upon the free operation, under purely selfish motives, of the law of supply and demand, in order to protect efficiency by protecting the producer from being compelled to turn over to buyers, by way of lower prices, the gains which he creates by his own efficiency.

Now the proposition that there ought to be a world-wide stabilization of the exchange-value of gold, that is, of the average movement of prices, and that the governments of the world ought to authorize the Central Banks of the world to stabilize the value of gold, is in effect the same ethical the same ethical proposition and public purpose as that which underlies the patent laws and the protection of trade-secrets, trade-marks, good will and business reputation. But it goes further and protects those who do not have those legal protections to their efficiency. One purpose, at least, of gold-value stabilization is that the gains from increasing efficiency, in all industries, shall go as much as possible, in the first instance, to producers and not to sellers, buyers or consumers; that the producers shall make their gains as efficient producers and not as mere sellers by higher prices received from buyers; and that, as either ultimate or intermediate consumers, they shall make their gains, not by lower prices paid as buyers, but in their other function as efficient producers. The work out of the proposition is not as simple as the patent and similar laws and court decisions, and is not nearly as simple as the supposed

illustrations which we have above constructed in order to simplify the theory. We have to consider some of these additional complexities.

3. Averages and Relatives

In the first place we have to distinguish between our illustrations of an equal rise or fall of all prices and an average rise or fall. This word "average" is usually misleading, because it is not distinguished from "equal." In our above illustrations we made the forced assumption that all prices changed equally by the same percentage. All of them fell equally ten per cent, or all of them rose equally ten per cent, or all of them were equally stable. There was no need here of using the word "average." We used the word "equal."

But this is quite contrary to fact. No two prices move equally at any time. If there are five hundred commodities then there are five hundred different movements of prices. Consequently we use the words "average movement of prices" and not "equal movement of prices."

Our illustrations were supposed to show three equal movements of prices for all commodities - an equal movement downwards, an equal movement upwards, and an equal movement on the level. But, see the puzzle which enters when we summarize what actually happens by speaking of the "average movement of prices." There is, of course, no such thing in the world as an "average." Did you ever see an "average man?" No, an "average" is only a figment of the imagination. The average size of families in the United States is said to be $5\frac{1}{2}$ persons. What kind of a family would it be that had $5\frac{1}{2}$ persons? Actual families have whole person and no half-persons. The average family is a figment, but it is useful because it boils down into one figure millions of different figures and enables us to make comparisons. Thus an

average is a kind of base line from which we can say that a certain actual family is larger than the average, while another is less than the average.

Hence we distinguish between "averages" and "relatives." The average is the base line for comparison. The relatives are the differences between the actual family and the average family. If the average is 5 persons then a family of 7 persons is, comparatively, 40 per cent above the average size, and a family of 4 persons is, comparatively, 20 per cent below the average.

Much the same is true of the "average movement of prices." It is a figment used as a base-line for comparison. The only actual movement of prices is millions of individual movements of individual prices. Each movement of an actual price is simply an actual transaction between a seller and a buyer. If the two agree on a price of \$1.25 per bushel of wheat where previously they had agreed on \$1.00 per bushel, then the actual price has moved up 25 per cent, and the actual value of money has moved down 20 per cent, because it takes 25 per cent more dollars to buy wheat, which is the same as saying that a dollar will buy 20 per cent less wheat.

I can see or understand this movement of an actual price like the price of wheat. I can see the price move up, or move down, or move on the level. I can see the value of my money, inversely, move down, or up, or level. That is because I am buying wheat but am not buying an average of everything. When, then, I am told that the average of 500 prices is moving down 10% and the value of money is moving 11%, I am liable at first to think that all prices are moving down equally 10 per cent, whereas some may be moving down 20, 30 or 40 per cent and others are moving up 5, 10, or 15 per cent. So, when I am told that the average of 500 prices is stabilized I am likely to

think that somebody or some government has fixed all the prices equally so that none of them is changing. But all that has happened is that I have averaged billions of actual changes in prices and find that there has been no change in the average of prices and therefore no change in the average value of money, although, comparatively, the 500 prices have moved in 500 different actual directions, and the actual value of money in each of the actual transactions has moved, inversely, in 500 different actual directions relative to each other.

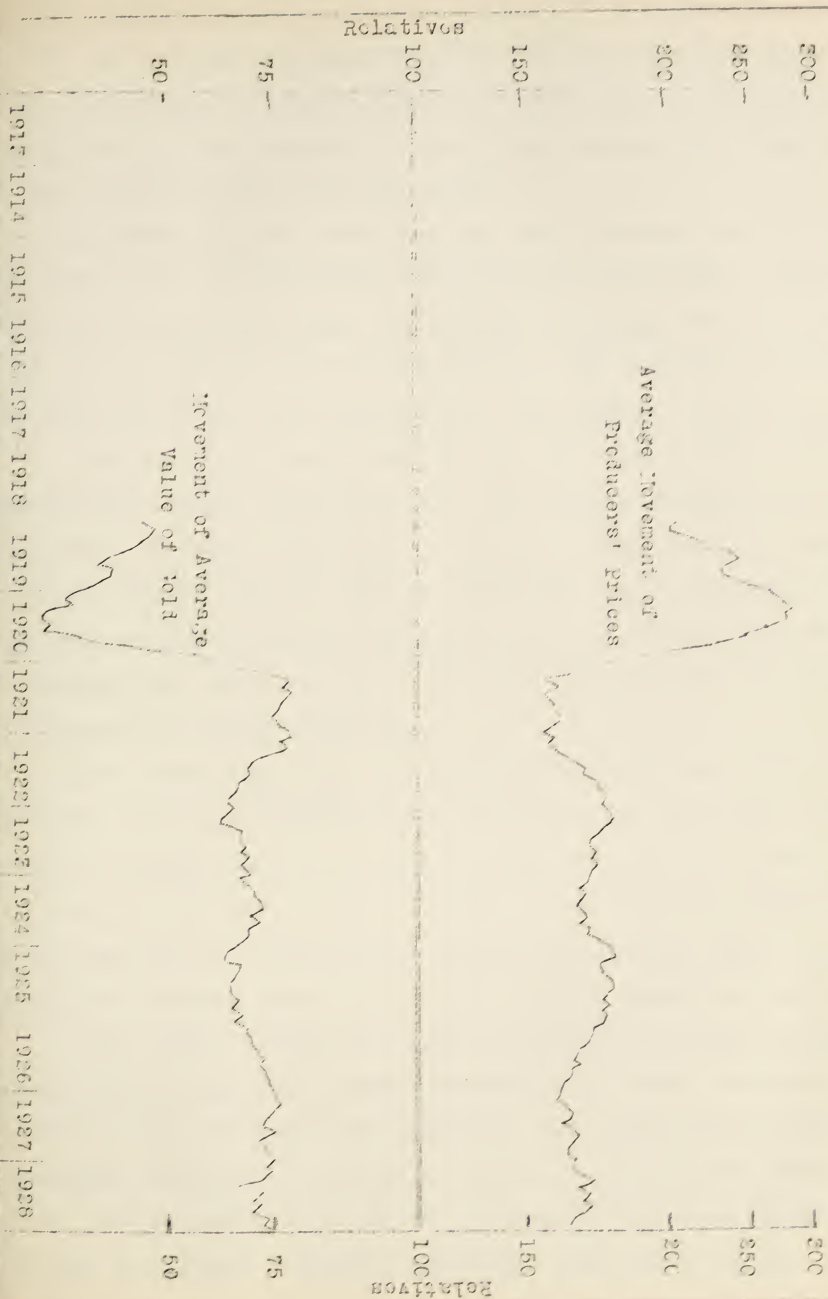
4. Index Numbers

The best way to show what is meant by the average movement of prices is to take the method of showing it which economists have been developing during the past fifty years. The accompanying Chart I is constructed according to this method.

All the movements of all prices must have the same starting point in time, if we wish to compare their movements. In this case we use the year 1913 as our starting point.

But also, if we intend to make comparisons, all the movements in prices must start with the same price. We have more than a hundred different commodities with different prices, all the way from say \$1.00 per bushel for wheat, to \$40 per ton for steel. In order that their movements may be compared all of these prices, for the year 1913, must be reduced to the same price. The only way to do it is to call each price arbitrarily 100 - not a price but an "index number" of a price - and then to compare the actual changes in price for subsequent years with its index number, 100, for the base year. If wheat was \$1.00 per bushel in 1913, that price is given the index of 100 for 1913. Then, if the price rose to \$2.50 in 1920, the index for 1920

CHART I
VALUE OF GOLD



is 250, showing that the price has risen 150 per cent. So with steel. If \$20 per ton was its price in 1913, and the price rose to \$50 in 1920, the price for 1913 is given an "index" of 100, on which account the price for 1920 becomes the index 150, showing that steel has risen 50 per cent above the price for 1913.

Likewise with all other prices. Each starts at 100 for 1913, and then moves by percentages above or below that base. Then, by averaging these percentages the average percentage of price change from 1913 is ascertained for all prices. The inverse of this average movement of prices is the movement of the average value of gold.

Thus it will be seen that for the years 1913, 1914, and 1915, there was an ideal stabilization of the average movement of prices, and, inversely, an ideal stabilization of the average value of gold. The average departed from the base by less than 2 or 3 per cent. If, in one year or month it moved upwards 2 or 3 per cent, it afterwards moved downwards, but oscillated about the base line, tending to come back if it departed in either direction.

This stabilization of the years 1913 to 1915 was much better than the most ideal stabilization that could be hoped for, it being generally agreed that 5 per cent "tolerance" above or below the line of absolute stability must be allowed, so that if the average movement of prices had been "reasonably" stable from 1913 to 1928, it would have oscillated between 95 and 105, as the outside limits of tolerance.

This limit of tolerance must be allowed on account of the imperfection of the index numbers themselves by which changes in direction of the movements are measured. All index numbers are only estimates, supposed to be representative of billions of price agreements, and can never be as exact a representative as a series of quotations of a single commodity would be. They are a picture of what

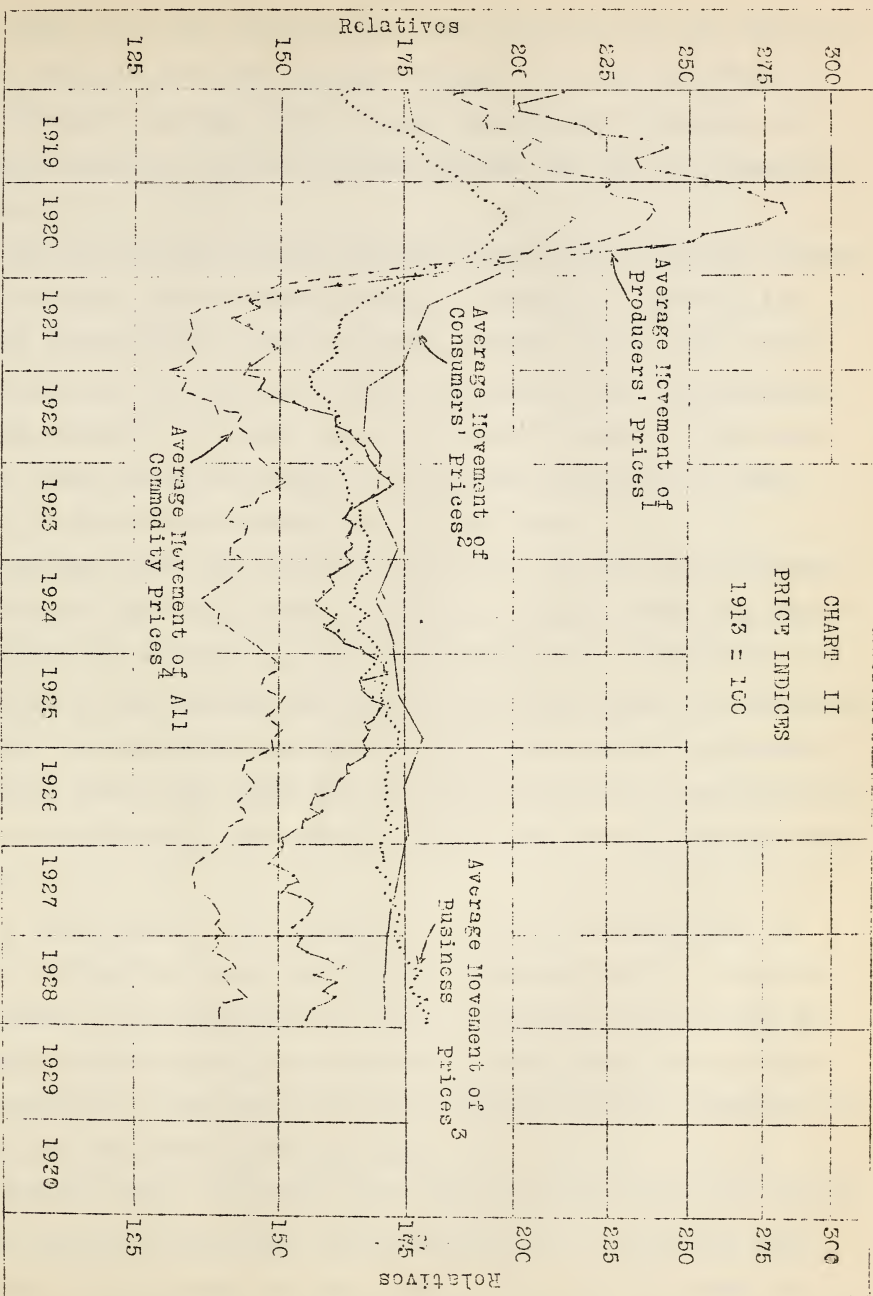
happens on the average, not a demonstration in mathematics. For this reason alone an uncertain amount of tolerance must be allowed.

The chart shows, by computation what was the corresponding change in the average value of gold for each monthly change in the average of all prices. When the average of prices went to 103 in the middle of 1914, the average value of gold fell to 97, which is merely saying that gold, on the average, would purchase 3 per cent less commodities. Or, when the average price-movement went to 247 in June, 1920, the average value of gold fell to 41, meaning thereby that gold would purchase only 41 per cent of the average quantity of commodities that it would have purchased in the beginning of 1913.

Thus, while the "average" is a figment constructed by the statistician and mathematician, and exists nowhere except in the head or on paper, it shows a social reality, which we are now examining with reference to the problem of whether people get rich, on the average, as producers, or as sellers, or as buyers, or as ultimate consumers.

For this reason, something more must be said about this index number. Index numbers are always constructed by economists or statisticians for some particular purpose which they have in mind. There are thousands of commodities, or uses of commodities, all the way from stocks and bonds to house rents, labor, coffee and clothing, and from wholesale prices to retail prices. Some kind of selection must be made, and this selection is always made with reference to the economic purpose which the statistician wishes to obtain by his selection of the commodities and prices.

CHART II

PRICE INDICES
1913 = 100

- 1 Wholesale prices - population weighted.
- 2 T. S. Bur. of Lab. Stat. Cost of Living.
- 3 T. S. Bur. of Lab. Stat. Wholesale Prices.
- 4 T. S. Bur. of Lab. Stat. Wholesale Prices.

Chart II is here introduced to show comparatively the different results obtained as to the average movement of prices according to four different purposes, which we name the Producer's Purpose, the Consumer's Purpose, the All-business Purpose, and the All-commodity Purpose.

The all-business purpose appears in the curve, "average movement of all-business prices," representing, as nearly as possible, all business transactions of selling-buying stocks, bonds, land, labor, commodities, at wholesale and retail, by means of the corresponding checking accounts and pocketed money furnished by banks to their customers. This estimate is made by the eminent statistician, Carl Snyder, of the Federal Reserve Bank of New York.

Another curve, the all-commodity curve, is that of the Bureau of Statistics of the United States Department of Labor, with the purpose of compiling as extensive a list as possible of all commodities sold at wholesale, now reaching the number, 550. This curve is undoubtedly as highly representative as possible of the all-commodity movement of prices, just as the preceding one has reached the closest representation yet obtained of the prices actually paid in all business transactions.

A third purpose, the consumer's purpose, is represented in "average movement of consumers' prices," compiled by W. I. King from the figures of the Department of Labor, and shows comparatively the changing quantities of goods, at retail prices, which can be bought, on the average, by the dollar of that class of ultimate consumers whose incomes are less than \$5,000 per year.

Another curve, including about 257 wholesale prices is compiled for the purpose of including representation of all producers whose products, at the average of their prices, represent the amount of

money obtained by sellers and available for distribution to the producers as profits and wages.

Of course, it is evident that if we computed the average value of gold, as we did in Chart I, for these four different purposes, we should have four different movements of the average value of gold, each moving inversely to the four different movements of the several price-averages. This indicates that the average value of gold is not any hit or miss accidental compilation, but is a different average value according to our different purposes, having its own different average-purchasing power according to whether it be the producer's value of gold, the all-business value of gold, the all-commodity value of gold or the ultimate consumer's value of gold. Many other purposes might be considered which would give widely different movements of the average value of gold, but these four purposes are adequate for the comparisons we now wish to make.

In order to lay the foundations for these comparisons we must consider two technical problems in the computation of index numbers, namely the "selection" and the "weighting" of price quotations. Each is guided by the purpose in view. These technical difficulties will reveal the necessary imperfection of index numbers already referred to.

In the computation of the producers' index number the effort is made to get as near as possible to the changes in prices received by employers for the joint product of themselves and their employees. For this reason 257 representative commodities at wholesale prices are selected from the 550 of the Department of Labor. Then the price of each commodity or group of commodities is given a "weight" proportionate to the number of the working population - manual, mental and managerial - engaged in the production of that commodity. For example,

the number of workers engaged in agriculture = 42 per cent (verify and advise).

5. Different Meanings of Value

For the foregoing reasons we shall take as our standard of comparison the average movement of prices for Producer's purposes and shall consider the puzzling problem in actual practice, namely, How may the gains in efficiency throughout all industry and agriculture go to producers, and not to sellers, buyers, or consumers, if that is thought to be best all round.

There are, of course, many changes in prices caused otherwise than by changes in efficiency, but let us set them aside, for the present, while we carry out our idea of averages. Suppose, in view of our discussion of index numbers, we change our imaginary illustrations from equalities to averages, and that there occurs an average increase of ten per cent in efficiency in all manufacturing and mining industries, but no increase of efficiency in agriculture. And suppose just half of the man-hours of the country are employed in these industries and the other half in agriculture. Suppose, further, that all industrial prices fall ten per cent on the average, owing to an average increase in efficiency, and that all agricultural prices remain stable, on the average, because there is no average increase in efficiency. Evidently, the average of all prices - thus "weighted" one-half to agriculture and one-half to industry - has fallen five per cent. But, on the other hand, all of the ten per cent average gain in industrial efficiency has gone over to the agricultural population as buyers and none of the efficiency-gains have remained with the manufacturing population as the producers who had increased their efficiency.

Suppose next we compare this average fall of 5 per cent in all prices with a stable average of all prices. When we say that the average of all prices both agricultural and industrial, has remained stable, what we mean is that the average value of gold has been stabilized. Evidently, if so, then the average of agricultural prices has risen 5 per cent instead of remaining constant, and the average of industrial prices has fallen only 5 per cent instead of falling 10 per cent. But, notice, there remains the same relative difference as before between agricultural prices and manufacturing prices, but on a higher level of the average of all prices. The agricultural population, on the average, continues to obtain, as buyers, all of the average gain in efficiency brought about, on the average, by the manufacturing population as sellers.

Evidently, if the average value of gold is thus stable, and if prices fall exactly with the average increase of all efficiency, then the prices received by those who have not increased their efficiency will rise, and the prices received by those who have increased their efficiency will fall. Only in this way can the differentials between the two sets of prices remain equal, after stabilization, to the difference brought about by the changes in efficiency. The situation, in this respect, offers no argument in favor of stability of the value of gold. It is not any better nor any worse than it would be with a fall in the average of all prices or with a rise in the average of all prices. Stability of the average of all prices would always have to take into account a rise in the prices of products where efficiency is not increased, offsetting a fall in the average of prices of products where efficiency is increased.

But, neither is this an argument against stability of the average value of gold. It is simply what we have already considered in

our analysis of the economics of patent rights. When prices fall after the expiration of the patent, the buyer-consumers get presumably all the efficiency gains which, during the life of the patent, went to the producers. And this disposition should not, and could not be interfered with by a proposal merely to stabilize the average value of gold. The same differential gain from efficiency should and would remain whether the average is rising, or falling, or stable.

It may, however, seem absurd that the prices of the inefficient should rise five per cent in order to keep the average of all prices stable, and merely in order to offset a fall of 10 per cent in the prices of the efficient, so that the prices of the efficient should fall only 5 per cent when their efficiency has increased 10 per cent. But it is no more absurd than that the prices of the inefficient should remain stable when the prices of the efficient fall 10 per cent. Either is but exactly the difference to be expected, whether the average of all prices rises or falls or is stable. It is the difference between an absolute rise or fall and a relative rise or fall. Absolutely a price rises when compared with its former self. Relatively it rises when compared with the rise or fall of other prices. It is the relative rise or fall of prices that is important. Particular prices continue to change, compared with each other, on account of particular causes affecting some and not affecting others, although the average of all is stable. An absolute rise of 5 per cent for the inefficient and an absolute fall of 5 per cent for the efficient leaves them, relatively to each other, the same as when there is no absolute rise for the inefficient but is an absolute fall of 10 per cent for the efficient. The "spread," or "differential," between the two is 10 per cent in both cases.

This is not only what happens - but it is also what is desirable when changes in efficiency have had time to work out. There should be a gradual spread between the prices of the efficient and the prices of the inefficient. The alternative would be that some arrangement should be set up by which the gains in efficiency could never be taken, by a lower price, from those who introduced the efficiency, or from their successors forever. Such an arrangement would be, for example, a perpetual patent-right. The law makes the life of a patent seventeen years. This is deemed long enough to offer sufficient inducement to both the inventor and the manufacturer to encourage them to go ahead with their inventing and investing, with the expectation that their prices will not immediately fall on account of their greater efficiency. If patents lasted too long - say thirty, forty, or fifty years, or perpetually, then the gains of efficiency would become the gains of monopoly. The efficiency which is deemed to entitle the producer to gains is not the efficiency of our ancestors - it is our own efficiency as we go along from day to day and year to year, with a sufficient expectation, however - say seventeen years in the case of patents, and longer or shorter in the case of trade secrets, trade marks, good will and business reputation - to assure us that it will be worth while for an inventor or manufacturer to make the investment of time, energy and money needed to realize upon the improvement. Hence there should be, in course of time, a fall in prices of the more efficient, compared with the less efficient, and this happens just as well when the average of prices is stable as when the average falls or rises.

What is it that corresponds to the expectations of patent rights, trade-marks and trade secrets when applied to the proposition to stabilize the average of gold?

In the first place it is the difference between fixing individual prices and stabilizing the average of prices. To fix individual prices would, in effect, be similar to a perpetual patent-right, and thus change the gains from efficiency to the gains of monopoly. But, to stabilize the average means that particular prices will move up and down relative to each other, according to all the individual forces, including efficiency, that cause different prices to move in different directions.

In the second place, improvements in non-patented efficiency do not quickly spread to competitors - indeed, competitors may not have the managerial ability or the capable labor force that enables them to catch up.

This means, in the third place, that particular prices do not fall as soon as one or two producers have increased their efficiency, but they fall gradually, as the number of efficient producers increases. Meanwhile the more efficient are getting a profit and the less efficient are barely holding on and gradually going out of business, so that their customers are going over to the more efficient at lower prices. This we name the "individual spread" of efficiency within a particular industry.

It will be noted at once that it was misleading when we spoke of an average increase in efficiency. This is one of the pitfalls of the word average. Sometimes it is useful, sometimes misleading. Here it is misleading, for the "average" wipes out the differences between individuals, which should be preserved and not wiped out by averaging. It is only individuals and individual establishments that increase their efficiency, and it is only because some individuals are more efficient than others, all of them selling at the same price in the same market, at the same time, that there can be any efficiency

gains for the more efficient individuals. But the term "equal" is also untrue in this connection. We used it only for illustration. So we say the "spread of increasing efficiency from individual to individual," and not the "average increase of efficiency," nor the "equal increase of efficiency."

Fourth, Not only does this spread of individual efficiency within a particular industry go forward more or less slowly, but, also, different particular industries, each as a whole industry, increase their efficiency at different times and at different rates of speed. At one time the manufacture of clothing becomes more efficient at an entirely different time the production of wheat becomes gradually or suddenly more efficient. This we name the "industrial spread" of efficiency within the nation as a whole. We use the term "industrial" for brevity's sake to include all enterprises whether manufacturing, mining, agricultural, mercantile, or banking. Again, it is misleading, in this connection, to speak of the "average" increase of efficiency within the United States as a whole. The "average" is good enough if we wish to compare the whole United States with the whole of Italy or Germany, but here and now we are comparing one industry with another industry, not one nation with another nation, in order to bring out, not the average for the nation, but the differentials between the industries within the nation. So, we use the term, "industrial spread of efficiency" from one industry to another at different times, different degrees and different rates of speed.

It is towards these differences in both the individual spread of efficiency within an industry, and the industrial spread of efficiency within a nation that we must look for the foundation on which to arrive at any understanding of how the gains in efficiency may be made to go, in the first instance, to producers and not to sellers, buyers or consumers, by means of stability of the average value of gold.

They must be made to go to them as individuals, or rather to those groups of individuals which we understand to be a single business enterprise of employers and employes, whether in agriculture or industry. They must go to what in America we call "going concerns."

Fifth. In calculating changes in the average value of gold by means of the average of prices, no one industry has very much "weight" in making up the average of all prices. In our illustration we assumed that one-half the population was engaged in agriculture and one-half in manufactures. Therefore when the efficiency of manufactures increased 10 per cent and manufacturing prices therefore fell 10 per cent, the prices of agriculture would have to rise 5 per cent and of manufactures to fall only 5 per cent (instead of 10), in order to keep the average of all from falling. Here the "weighting" was 50 per cent manufactures and 50 per cent agriculture. But this is not the way it actually happens. The efficiency spreads by particular industries, and these have very small weight compared with the total weight. The production of wheat is carried on by only about 3 (?) per cent of the population. Its "weight" therefore is about three per cent of the total weight, and the weight of all others combined is 97 per cent of the total weight. If then the efficiency of wheat production is increased 10 per cent and wheat prices fall 10 per cent the average of all prices falls only $\frac{3}{10}$ of 1 per cent. Hence, if the average of all prices were to remain ideally stable, then the other 97 per cent would rise only $\frac{3}{10}$ of 1 per cent, and wheat, instead of falling 10 per cent in price would fall 9.7 per cent. A rise of $\frac{3}{10}$ of 1 per cent in the prices of 97 per cent of all commodities, excluding wheat, would offset a fall of 10 per cent in wheat, which is only 3 per cent of all commodities, and the average of all would thereby remain stable. Our illustration greatly exaggerated the rise of prices for the inefficient where the average of all prices is stable.

Meanwhile, the increased efficiency is spreading to other industries, but stays where it is in wheat. If the average of all prices falls $3/10$ of 1 per cent on account of increasing wheat-efficiency, then it will fall another $1/10$, or $2/10$ or $3/10$ according as other industries spread their efficiency, and there will be a gradual fall in the average of prices owing to the gradual spread of efficiency from industry to industry. But if the average of prices is stable, meaning that the producers' average value of gold is stable, then, at each successive increase of efficiency in particular industries, all of the prices of the others rise slightly, each of them taking its turn in course of time.

Sixth. When any one industry has increased its efficiency, two results ordinarily occur: the price per unit of its output is reduced, but the quantity of output is increased to a greater or less extent. Here we have another meaning of value, which, in general, may be named Census Value, because this is the kind of value which the census reports upon as the annual "value of product" each five or ten years, in order to estimate the total production of wealth during the year. It is not really wealth at all. It is prices of all commodities multiplied by the quantities of all commodities. And it has two aspects, according to whether it is looked at from the standpoint of all sellers or from the standpoint of all buyers. If looked at from the standpoint of Sellers we shall name it Total Income Value, or simply Income Value. If looked at from the standpoint of Buyers we shall name it Total Purchasing Fund, or simply Purchasing Fund. It is the same Census Value in either case. But, from one point of view it is the total money income which producers are estimated to receive for their total output as sellers at the prices at which they sell. Hence it is the Producer-Seller Income. And, from the other point of view it

the total money outgo which the same producers - now as buyers - pay for all of the commodities which they buy from all of the sellers. Now it is the Producer-Buyer Purchasing Fund.

The two are equal and they must come out equal if the statistical computations are correct. The first great national computation of this kind was made by the National Bureau of Economic Research in 1921. The Bureau made two independent investigations of what it called "the national income" for the years 1909 to 1919, afterwards extended to 1922, and was gratified to find that they came out nearly equal, as they should. One estimate was called the "income received," the other the "income produced." But the term "income produced" is contradictory, and was interpreted to mean "income estimated by sources of production." But even this is not adequate for our present purposes, though adequate for the Bureau's purpose. For income is not produced - it is acquired. That which is produced is "output." The producer as such acquires no income. It is only as seller of his output that he acquires the income.

The difficulty is with the unit of measurement. The dollar measures income but the man-hour measures output. The Bureau used only dollars, just as the census uses only dollars. Hence the difficulty in separating producer from seller, and the source of both the census error and the popular error of giving the name "wealth" to money income. Only "output" is wealth, the work of producers; and income is the acquisition of money, which is the business of sellers. The difference, in principle, is great, for output depends on efficiency of production but income depends on scarcity of output. For this reason we separate the two and, instead of "income produced," we

1 Income in the United States, Volumes I, II, and X (1921, 1922, 1924)

say "income value," since it is the exchange-value, in the form of money acquired by sellers for their total output at the several scarcity values which they can command at the time.

But this total money income is being continuously expended by the same producers in order to buy other commodities for their own use, either as producers for further work of production, or as ultimate consumers for ultimate destruction. It is the same income-value, no more and no less, for it is money-income and not the "psychic income" which buys nothing. As buyers they cannot spend more money than they receive. They may lend it to others, but that is only a transfer and not a creation of buying power. And, with our banking system, which substitutes bank deposits for gold, they are really lending it to others to buy commodities and labor, if they do not do that buying themselves. For these reasons we name it the Fund of Purchasing Power and, during the course of a year this Fund of Purchasing Power expended by all buyers is substantially the same as the Income Value received by all sellers.

But, while this fund of purchasing power is the same amount as the Income Value of Sellers, it changes in two directions - changes in the quantity of output and changes in the average of all prices. The two changes can be distinguished. For example, suppose we have an industry which, during the years 1913 to 1927 was producing regularly 100,000 units of output per year. Although the amount of output is absolutely stabilized at 100,000 units for all the years, yet the census value changed with the change in prices per unit. If its prices moved in unison with the average movement of prices, beginning at, say, \$1 per unit in 1913, then, in that year, its census value was \$100,000; but in 1920 its census value was \$247,000; in 1921 its census value had fallen to \$138,000, then rose to \$161,000 in 1925 and fell

to \$145,000 in 1927. (See chart) Next, if added to this change in prices, there is also a set of changes in the number of units produced per year, it will be seen that the census values are subject to the two changes of output and price.

These census values then appear from two points of view. They are both the income-value of producer-sellers and the fund of purchasing power in their same hands as buyers. Our industry, used as an illustration, although its output remained at 100,000 units, yet its fund of purchasing power, available for the purchase of all other commodities, rose from \$100,000 in 1913 to \$247,000 in 1920, then fell and rose and fell until it would purchase \$145,000 worth of other commodities in 1927. If all of the industries of the United States are added together, as was done by the National Bureau of Economic Research, then the census value of the total output, or the total fund of purchasing power of the United States was about 33 billion dollars in 1913, and rose to 66 billion dollars in 1919, an increase of 100 per cent. But the national output of commodities and services rose from 33 billion units of output in 1913 to only 37 billion units of output in 1919, an increase of only 12 per cent in output. The difference between the 100% increase in purchasing power and the 12 per cent increase in output arose from the fact that prices rose on the average from an index number of 100 in 1913 to an index number of 177 in 1919, a rise of 77 per cent. So that the total fund of purchasing power in the hands of buyers, that is, the total income value for producer-sellers, increased from two sources, an increased output of 12 per cent and an increased average price of 77 per cent, making the total census value, income-value or fund of purchasing power, increase 100 per cent. It is this changing total fund of purchasing power that determines, as we shall see, the employment or unemployment of labor with increasing efficiency.

It is necessary also to distinguish this meaning of census value, because it is likely to carry misleading conclusions regarding of efficiency. If the price of wheat falls from \$2.00 to \$1.00 per bushel, and the crop of wheat doubles from one billion bushels to two billion bushels, then the income value of wheat in the census returns shows no change whatever, and the conclusion might be reached that the wheat farmers are just as prosperous as they were at the higher price. Such conclusions have been reached in certain quarters. But two considerations must be observed. If the wheat industry has doubled its efficiency, so that two billion bushels are produced with the same number of man-hours as the former one billion bushels, then the gains from increased efficiency are taken away from the farmers and turned over to the urban population. On the other hand, if there has been no increase in efficiency, but there has been the accident of an extra-good season, then the farmers apparently are just as prosperous as they were because the census value of their output is just the same. Nevertheless the good luck of a good season is not a gain for the farmer, offsetting his bad luck of bad seasons, but is a gain for the urban population, offsetting their loss in bad seasons. Which gains or losses the most is a study in the movements of wholesale vs. retail prices, which we shall later consider.

Thus we have three meanings of value to be distinguished. When we speak of the Exchange Value of a commodity we mean an average of all other commodities which a unit of that commodity, say a bushel of wheat, will exchange for directly, as though money prices had not intervened. When we speak of the Value of Gold, or exchange-value of gold, which is the debt-paying medium, we mean an average of the price of all other commodities, disregarding their exchange-values among themselves. And when we speak of Census Value we mean, not exchange-

value of gold, nor exchange-value of commodities, but the total income value and fund of purchasing power of either a single establishment, a single industry, or all industries. It is a changeable fund consisting of two dimensions, the total output and the average of prices.

Seventh. But there is a further explanation needed of what we mean by the Value of Gold. This meaning may be described as that which many people, without thinking it out, feel the value of gold to be. We shall distinguish this mere feeling as the Intrinsic Value of Gold, against the meaning here intended of the Exchange Value of Gold. The exchange value of gold varies inversely with the average movement of prices and can be measured by the statistics of averages. The "intrinsic value" is just as vague as any other feeling. It cannot be measured, it differs for every individual and it cannot be used in conversation except to mislead. Sometimes intrinsic value seems to mean, How much labor would it take to produce the gold. The answer is a million guesses. Sometimes it seems to mean, How much satisfaction can be gotten out of the use of gold. Sometimes it means, How much is gold worth for filling teeth and gilding spoons. Sometimes it is intended to mean, How much value does society as a whole give to gold, the so-called "social value" of gold or money. Back of all these ambiguous meanings of intrinsic value is the idea, How much do I feel that gold would be really worth if there were no government or Federal Reserve System.

But there is a government, there are courts with their ideas of legal tender, there is a Federal Reserve System, there are wars, there is a volatile credit system, and hence these intrinsic meanings do not interest us when speaking of the prices of commodities, and when inquiring about efficiency and how the present system distributes the gains of efficiency. Here the really truly thing is prices. The

average of these prices is gold's value in exchange, and the exchange value of gold rises or falls inversely to the average movement of prices of commodities.

The worst misleading feature of the idea of Intrinsic Value of gold is the idea that it is a fixed value, and that, when the average of prices changes, it is not gold that changes in value, but it is commodities that change in value. Here, again, is the distinction between the absolute and the Relative. In some way it is felt that there is an intrinsic value of gold absolutely fixed by Nature or Society. If so, the causes of change in its exchange-value are to be looked for on the side of commodities. But if we abandon the Intrinsic Idea of value and adopt the Exchange idea of value then we abandon the idea of something absolute in itself and begin to look for something that is relative to something else.

This requires us to make the distinction, often overlooked, between the Measure of value and the Cause of value. If Intrinsic Value of gold does not change, then there can be no cause of change, and, of course, no measure that can tell whether there has been a change of the value of gold. The only causes of change are thereby relegated in advance to the side of commodities. But if the value of gold is its average exchange-value then the distinction between measurement and causation becomes important. Measurement has nothing whatever to do with causes. It has to do only with effects. A piece of cloth is a yard long. That result is the effect of various causes. We measure the result, and our unit of measurement is an arbitrary unit agreed upon for the purpose of understanding each other respecting the particular dimension in which we are jointly interested. We do not measure length by pounds, or kilowatts, or man-hours. Having our units

of measurement at hand we are in position to investigate all the causes which resulted in that particular dimension which we are measuring.

So with the exchange-value of gold or anything that has exchange-value. We are interested in a certain dimension not found in physical science. How much of things in general will it buy? We have to invent a new unit of measurement for this particular purpose, and it takes considerable investigation to invent the unit, just as it was a great achievement of prolonged investigation which invented the ampere, the volt and the kilowatt-hour. This invention for measuring the changes in the exchange-value of gold is not yet perfected and agreed upon, as we have seen in the discussion of index numbers. One reason why it is not yet agreed upon is the lack of agreement respecting the purposes to be accomplished by the measurement. Another is the technical mathematical devices suitable to constructing index numbers. Another is the close connection of theories of causation with the theory of measurement. Another is the intrinsic value idea that there is nothing to be measured.

When these difficulties are cleared up and measurement of effects is distinguished from causation of effects, then we shall be in better position to investigate the causes themselves. There may be thousands of causes for changes in the exchange-value of gold, some of them on the side of gold and banking, others on the side of commodities, each of which must be investigated separately and in combination with all the others. Each of these participates in determining the changes in the average value of gold, for, as is well known in all economic investigations, so closely are all factors, the world over, tied together that a change in any one is a cause of change in all the others.

But this study of causes is different from measurement of the results. If gold prices rise, on the average, it simply means that the purchasing power of gold falls, no matter what the causes. If gold prices are stable, on the average, it means that the value of gold is stable, regardless of causes. If anybody is working out theories of cause and effect, or if a banking system is trying to stabilize the value of gold, it is just as likely that the causes will be found on the side of commodities as that they will be found on the side of gold. That is a matter of investigation and experience. It has nothing to do with the definition and measurement of the value of gold any more than the length of a yard of cloth has anything to do with the causes that made the cloth a yard long. Yet the two are often confused, especially on account of the intrinsic-value idea of the value of gold.

We have, however, seen that the purposes for which the measurement is devised have an important bearing upon the value itself. There are many values of gold according to the many purposes. For the present, however, we are concerned only with the distinction between measurement and causation.

An illustration of the way in which the idea of intrinsic value creeps unknown into the minds of investigators is found in the monthly bulletin of the Federal Reserve system for March, 1927. There it is calculated that the efficiency of American manufacturing industries increased 47 per cent during the eight years, 1919 to 1927, and this was compared with a fall of 10 per cent in prices from 1923 to 1927, and with a fall of about 40 per cent from 1920 to 1927 (look up). In this comparison there was evidently a vague assumption of an unchanging intrinsic value of gold instead of a changing exchange value of gold. The exchange value of gold is what it will buy in commerce,

regardless of causes. If prices fall ten per cent on the average then the exchange value of gold has risen 11 per cent, because a unit of gold will buy 11 per cent more of commodities, on the average. But this unexpressed belief in a fixed intrinsic value of gold led the Federal Reserve Board to throw the causation of the change in the value of gold upon changes in efficiency. It might have been thrown upon a thousand different causes. In fact, the causes are joint causes, from the very nature of the banking system which is continually creating and cancelling bank credit on the strength of negotiations between bankers and business men.

These joint causes are to be found in the transactions by which prices are made. A price is a measure agreed upon between a buyer and seller. If they agree that wheat shall be priced at \$1.00 per bushel and then afterwards agree that it shall be priced at \$1.25 per bushel, those joint agreements are themselves not only a rise of 25 per cent in the price of wheat, but also a fall of 20 per cent in the value of gold, for the purposes of those two transactions. Then, if we average up these billions of price agreements by index numbers, all that we have is the average change in price agreements. Each agreement has itself actually changed the value of gold, if a different price is agreed upon. Then an average of all the agreements is both a change in the average of prices and a change in the average value of gold. Each price agreement does its part in changing or stabilizing the value of gold, and the net outcome of billions of such agreements is measured, approximately, by our index number of prices. There were billions of causes for these billions of agreements. If any individual "cuts prices," that "cut" raises the value of gold, no matter what caused him to cut his price. If any individual "marks up" his prices, that reduces the value of gold. No one ordinarily

thinks of his individual part in changing the average value of gold. Each may think that the value of gold is intrinsic and independent of what prices he charges or receives. But every change which he makes in his own prices is a change in the value of gold. The average of all these changes is a change in the "average value of gold."

Eighth. A large bundle of these causes will be found in the banking system itself which has increased its efficiency more than any other industry. Bankers are the most important of all producers. They produce something that every other industry needs every day, all the time and far into the future. Other industries produce something that may be dispensed with for a time if the price is too high. But no matter how high or low the price of the banker's product - the price which he charges for the use of money - every other industry, no matter how high or low its own efficiency, must have the banker's product, or else go out of business immediately by the door of bankruptcy. This universal necessity which the bankers produce is the circulating medium that pays all debts and buys all commodities, all labor, stocks and bonds. No industry, in recent times, has more greatly increased its efficiency, the world over, than the banking business. The United States has, until fifteen years ago, been far behind other great nations in its banking efficiency. Now our bankers have caught up, and all of the banks of the world have adopted an efficiency device far superior to anything which any other industry can possibly adopt. All of them have pooled their raw material - gold - in Central Reserve Banks; have taken gold out of the hands of their customers and have substituted bank checks calling for gold on demand, which, however, they never furnish except occasionally for foreign shipment. Indeed, some fifteen or twenty countries, by adopting a so-called Gold-Exchange Standard, do not even keep any gold in their central banks.

Their raw material, the gold with which they do business, is not even owned by them - it is owned by banks in New York and London, and they use nothing but those bank balances in their foreign trade, while using their own paper money and bank credit in domestic trade.

This explains what is quite a marvel of modern centralized banking, How it is that although gold is almost never circulated, yet all prices are gold prices, and that we can speak of the "average value of bank credit." It is estimated that back of the 50 billion dollars of bank credit used in the United States, on the average, there is less than 4 billion of gold as bank reserves, or something less than 7 per cent. Each dollar of gold supports about \$13 of bank credit used as money. (verify) The reason simply is, convertibility of bank credit into gold for foreign trade.

It is these substitutes for gold, "manufactured" by negotiation between bankers and customers, that determine, more than even the gold-mining industry, what shall be the average value of gold. If we could imagine the world's present business carried on without bank credit and solely with gold, the value of gold would perhaps be twenty times its present value, by which is meant that the average of all prices would fall about 95 per cent. On the other hand, during and after the war, the central banks of the world, by negotiations with business men, manufactured so large a supply of bank substitutes for gold that the average value of gold in the United States fell, in 1920, to less than half its pre-war value; by which is meant that the average of prices of commodities rose more than 100 per cent. Since 1925, however, after billions of these substitutes were retired and not re-issued, the central banks of the world have been able, with the aid of the business community, to more nearly stabilize the average value of gold; by which is meant that the average of prices has been more

nearly constant at about 50 per cent above pre-war level, though individual prices have fluctuated widely. The bankers have discovered, by experiment and experience, some of the causes of changes in the value of gold, else they could not have stabilized it nearly as well.

One thing that they discovered was that the banks by themselves do not "manufacture" the circulating medium. It might, indeed, be said that they have nothing to do with it. The business men manufacture their own money, in the form of drafts, trade acceptances and promissory notes. Then the bankers buy these business credits by giving a bank credit in exchange, as a "deposit" on the bank's books. Then the checks drawn against these bank deposits are the money that buys commodities and pays debts.

But even so, the creation of this kind of money is really a vast repetition of bargaining between banks and customers. The banks charge a price - the rate of discount. This price is changed from time to time and from individual to individual, and varies all the way from two or three per cent up to ten, twelve, or higher per cent. And, like every other price, the higher the "bank rate" the less quantity of bank credit to business men ordinarily create, and the lower the bank rate the more bank credit are they likely to create if other prospects are favorable. Hence it was discovered, about seventy years ago by the Bank of England, and has been learned by the Federal Reserve System, that, by raising and lowering the bank rate of discount, the business men who produce and sell commodities can be more or less induced to increase or decrease the quantity of bank credit, and thus to increase or decrease the quantity of money, thereby increasing or decreasing the average value of gold. This is one of the ways in which the Central Banks of the World, since the Great War, have begun to cooperate, throughout the whole world, to stabilize the

average value of gold. All that is done, however, is to render more feasible the average of billions of price agreements among all classes of sellers and buyers.

6. Profits and Wages

The American Federation of Labor, at its annual convention in 1925, adopted a resolution¹ which is interpreted to mean a reversal of the time-honored principles of trade-unionism. Instead of a theory that wages should be based on the cost of a supposed standard of living, this resolution is understood to mean that organized labor is a partner with the employer in promoting efficiency and that, as such, its members should participate with employers in sharing the gains of efficiency. This means that both employers and wage-earners should increase, the one their profits and interest, the other their wages, out of the increasing efficiency of industry - not to the extent that either adds to that efficiency, for that can never be measured - but that they should reach some kind of a working arrangement by which the joint increase in efficiency should be shared between them.

The significant meaning of this resolution is that it is a rejection of the socialist or communist doctrine that profits and interest are a "surplus value" obtained by capitalists through the "exploitation" of labor; and, instead, it means that profits and interest are as necessary and meritorious as wages, each of which offers its special inducement to investors, employers and laborers to increase the efficiency of their establishments and of industry as a whole.

The resolution also means a rejection of the "wage-fund" doctrine long held by economists, by trade unions and by employers, that the

1 Proceedings, A. F. of L., 1925, p. 271.

amount of capital that can be devoted to paying wages is limited, and therefore profits must fall as wages rise, and profits can rise only as wages fall. On the contrary this resolution means that profits and wages rise and fall together, and that the way in which they can be made to advance together is through the increase of efficiency.

The resolution thus means, in general, that neither employers, investors, nor wage-earners, shall increase their profits, interest or wages by taking the increase out of other people, either as sellers by higher prices or as buyers by lower prices, but shall take the increase out of themselves by increasing jointly their efficiency.

I presume, however, it does not mean that if wages in any industry are below what is considered a decent standard of living, organized labor will not try to raise that standard by taking it out of consumers of the product. The resolution probably means that where wages have already reached a good standard, there profits, interest and wages should be still further increased by increasing efficiency. The resolution does not commit the Federation to a policy of getting higher wages sololy through higher efficiency. Indeed, we may question whether any industry which is so inefficient that it cannot pay decent wages, or, being efficient, is so oppressed by low prices paid by consumers that it cannot pay decent wages, is worth maintaining in the public interest. If it is to be maintained it should either become more efficient or should be able to raise its prices against consumers.

The latter is the accepted labor argument of the protective tariff, and the former is the infant industry argument of the tariff. By protection against the competition of low paid labor of Europe, American consumers are compelled to pay high wages to American labor. And, by protecting against the established industries of Europe, the infant industries of America are expected to become adult by increasing

their efficiency and thereby charging lower prices to consumers. — — —

The two arguments are sound and inseparable, and each has a bearing upon the proposal for stability of the value of gold. A stable value of gold throughout the world would carry one step further the public policy of patent rights and protective tariffs with the public purpose of inducing industry to get its higher profits, interest and wages by increasing its efficiency rather than by the circuitous and illusory process of taking it out of other people by raising prices received or reducing prices paid.

This would seem to be the logical inference from the resolution of the American Federation of Labor. It means that employers, investors and laborers should not get their enlargement of real profits, real interest and real wages solely as sellers, by raising prices or wages, which would mean that they should not take it out of other people who are buyers and consumers. Neither should they, as employers, expect to get their enlarged real profits out of either lower prices paid as buyers of raw material or lower wages paid as buyers of labor; nor should they, as laborers, expect to get their enlarged real wages out of lower prices which they pay as consumers; both of which would mean that they should not take their enlarged real profits or real interest or real wages out of other people as sellers, by means of paying them lower prices.

The resolution does indeed say that, by the elimination of waste in production, "selling prices may be lower and wages higher." But this is not inconsistent with what we here set forth, if the time factor is taken into account. What we also say is that, in the first instance, selling prices should not be lower, else the increased efficiency would not permit profits and wages to be higher; and that, in the second instance, selling prices of each particular output whose

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efficiency has been increased should gradually be reduced, relative to other prices, and without, however, reducing the average of all prices.

The logic of this position will appear from our supposition of a fall of the average of all prices with the industrial spread of efficiency, that is with a rise in the average value of gold due solely to the increase of efficiency. It is evident that labor cannot get higher wages and shorter hours if the employers do not get higher profits from which to pay the higher wages. And if the employers' prices fall at the same time and to the same extent that their efficiency increases, then they do not get the higher profits. Their increase in efficiency is taken away from them and is handed over to buyer-consumers. They are not able to pay as much of the higher wages, or grant as much of the shorter hours, as their increased efficiency would justify if there had not occurred this fall in prices.

If organized labor expects to get increased wages from increased efficiency of industry as a whole, it evidently must first let employer get increased profits from the same source, or, at least, let them get a bankable expectation of increased profits. Otherwise labor is in no better bargaining position than it was before, and it can get its increase only by bargaining. If employers' prices fall, on the average, in proportion to increased efficiency, the employers are in no better position to grant increased wages or shorter hours than they would have been if there had been no increase in efficiency. Their answer to labor must be that they have already passed along the gain of efficiency to consumers, and have nothing left for labor. Hence, on the average, employers' prices should be stable, by which is meant the value of gold, for the Producer's Purpose, should be stable, if labor is to share in the efficiency gains of industry. This does not

prevent particular prices from gradually falling, relative to others, after the gains in efficiency have first gone to the producers in higher profits and wages. A stable industrial value of gold, therefore, is a corollary of the resolution of 1925.

Here, however, again, we must see whether our use of "average efficiency" has introduced a fallacy. Return to the distinction between "individual spread" and "industrial spread" of efficiency. Efficiency always starts with individuals and individual establishments. It does not begin to show its effect on the price of that product until it has become an industrial spread of efficiency. The question then is, Can labor increase its efficiency wage during the spread of individual efficiency, or must it wait until the entire industry has increased its efficiency?

Here we have the important distinction to be made between employers as individual establishments and employers as a capitalist class. This is essentially the distinction between the philosophy of unionism and the philosophy of communism. Unionism distinguishes between establishments as individuals. Some employers are "fair," others are "unfair." But communism makes no such distinction. All capitalists are unfair in that all of them are making their profits by "exploiting" all laborers as a class. Taking the unionist position, however, Can labor unions induce fair employers to pay higher wages for shorter hours than their unfair competitors? Certainly the employer, no matter how much his spirit of fairness inclines him, cannot pay higher wages per hour than his competitors, if his establishment is less efficient than theirs. Neither can he do so if his establishment is only equally efficient with theirs. He can be really fair, distinguished from spiritually fair, only if his establishment is more efficient than competing establishments.

But even so, can he be induced to pay higher wages for shorter hours than they do merely because he is more efficient? If there is a competitive market in his industry then he certainly cannot charge higher prices than they do. Hence he can only pay the higher wages because his establishment efficiency is greater. "Fairness," then, is economically impossible, in competitive industries, without efficiency. We shall name this "differential efficiency." Fairness in individual establishments is impossible without differential efficiency superior to that of competitive establishments.

But if employers are to be induced to deal continuously with unions, then the unions must also be "fair." If so, can they insist upon a policy, in competitive industries, that the more efficient establishments shall pay higher wages for shorter hours than the less efficient in the same industry? Trade-union policy, during the past forty years, has learned repeatedly by experience a serious lesson on this point. This policy thus learned was formerly expressed as "the equalization of competitive conditions." It now is expressed as "the stabilization of competitive conditions," because it is found that business generally, including the banks, have, during the past twenty years, been trying to adopt the same trade union policy of equalizing competitive conditions.

This stabilization was attempted, in 1886, by a conference of the bituminous mine-workers and bituminous coal operators assembled from the entire competitive field which had its markets along the Great Lakes. Wages for day-laborers were made equal throughout the entire field, and the piece-rates for tonnage workers were adjusted so that all mines would have nearly the same total costs for labor, plus transportation, at their points of competition on the Great Lakes. This was equalization of competitive conditions. But, on the other

hand, the more efficient mines whether due to thicker veins of coal or to machinery or management, were charged a higher wage rate per ton than the less efficient mines, for the express purpose of keeping the less efficient in the market by preventing the more efficient from underbidding them in the prices of coal. This evidently was a penalty upon efficiency, on account of which the most efficient of all the mines, in West Virginia, could never be unionized, and eventually others of the more efficient broke away, one by one, from the conference agreement. Here, of course, this policy of penalizing the more efficient employers was possible only as long as, and to the extent that, the less efficient employers were able, by joining with the union, to control the wage rates of the more efficient competitors.

The policy in the anthracite field was different. Here the employers took the lead in the policy of stabilization, followed by the mine-workers' union. The employers stabilized the price of coal delivered at tidewater, and fixed the price at such a point that the least efficient mine owners could get into that market and make a profit. Then, in order that the more efficient might not drive out the less efficient, they limited the quantity that could be delivered by both the more efficient and the less efficient, according to some rule of rationing that they were able to agree upon. Then the union came along, and by arbitration or conference, equalized and stabilized the wages for all employers regardless of their differential efficiency.¹

The latter is the usual policy of all trade unions. Wages and hours are equalized, or stabilized, throughout the competitive field, such that the least efficient pays the same wages as the most efficient. Whether this can be done or not, and whether it ought to be done or

1. Seventh Special Report, U. S. Dept. of Labor, pp. ?? (1904).

CHAPTER XII

Willingness

1. Economic

If we examine the double meaning of wealth and other words used by Macleod and his predecessors we recognize that all of them have a place in economics. For, economics is not to be built upon a single principle of similarity abstracted from all others, such as exchangeability, but it is a science of "the whole" composed of several diverse principles, each of which plays its part in modifying all the others. Thus the concept "wealth" has the double-meaning of use-value, which increases with abundance, and scarcity-value which diminishes with abundance. The first meaning is equivalent to common-wealth wherein human ability produces "social-use-values" for the advantage of all. The second meaning reveals itself in exchange-value, or purchasing power, wherein "wealth" signifies the means of commanding use values for self from others. It is neither use-values alone, nor scarcity values alone that economics deals with, but it is Value - a functional relation between use-value, scarcity-value and futurity. This is rights of property and the economic subject-matter of transactions.

So with Adam Smith's Human Abilities, which Macleod named "immaterial wealth". Human ability has the double meaning of ability to produce use-values for all, which we name

Efficiency, and to command a greater or less quantity of use-values for self from others, which we name Scarcity. So with Macleod's "property rights". They mean either exclusive holding for self, where the subject matter is use-value; or withholding from others in the process of negotiation, where the subject-matter is scarcity-value; or alienation and acquisition of ownership, constituting negotiability, where the subject-matter is exchangeability. And the individual man--whom, as Macleod rightly says, the Physiocrats were the first to take as the basis of society where other systems held the individual subordinate to society - has the manifold meaning of an individual, a participant in transactions, and a member of many going concerns, whether moral, economic or political. He is governed by many common rules holding him in line with the purposes of the concern, while enlarging or restraining his individualism in the pursuit of his own happiness. Society is not his servant, as Macleod, the Physiocrats and economists held, nor is he the servant of society, as the Mercantilists held - he is a member and participant in manifold degrees of rights, duties, liberties and exposures.

For such a being we cannot pick out from all his other passions - hope, fear, anger, resentment, love - just that one passion, economic desire, as Macleod and his predecessors did, but all must be looked upon as concerted and reciprocal activities of all kinds for which no word is inclusive enough

1 Elements, 1:72

except the universal word Willingness. Not a single will, nor a mechanical flux of individual wills, but a principle of willingness operating in manifold ways through transactions and going concerns.

A constructive criticism of Macleod, in whose system we find our starting point, must be built upon the principle of willingness instead of desire. Willingness includes the whole of the activity of all the individuals engaged in transactions and going concerns. On this principle of willingness; and its negative, unwillingness, it is possible to unite in one concept of the whole-both the economic meaning of value as the functional relation of use-value, scarcity-value and futurity, and the legal concepts of mental acts, evidenced by physical acts, upon which rights are created and transferred. Herein, however, Macleod's term "Right" is ambiguous. It means not only rights but also liberties. It is in the analysis of this term by Hohfeld that we shall find, not only special cases of willingness, but also the foundation for dividing Macleod's "incorporeal property" into the two divisions "incorporeal" and "intangible", the former referring to expected payment of debts, the latter to expected purchasing power, wrongly named "debts" by Macleod and "pledges" by Turgot.

In the first place, Macleod's concept of Exchange, taken over from the physical economists, carries the physical meaning of manual delivery of a product, and is unsuited to his idea of legal delivery by transferring the ownership of the product. The term "exchange" consistently ties itself to

the concept of a commodity, although the transition has been made by Macleod from a commodity to the agreement between two parties out of which arises transfer of title to the commodity and creation, perhaps, of a debt, equivalent to the then value of the commodity. Instead of a physical exchange, therefore, we are dealing with a transaction, involving that process of preparation and negotiation which terminates in the "meeting" of two minds upon an agreement, evidenced by acts, words, or writing whose effect is to transfer titles by act of law.

Since beneath this mere meeting of minds is the evolving principle of law that the minds must be willing minds - a willing buyer and willing seller - an analysis of willingness is imposed upon the court before the law will transfer the title. This leads to the distinction between persuasion and coercion, or duress. These terms do not refer merely to psychological feelings of pain or pleasure, they refer to a human will choosing between alternatives. The alternatives here occupying our attention are economic alternatives in that they are a choice between economic values. Each of the two parties makes such a choice. Hence there are not merely two parties to the transaction, there are at least four parties - at least during the period of negotiation and until the minds of two of them meet and thereby pick themselves out from all others. There are therefore at least two buyers and two sellers to every transaction, the actual buyer and seller and the potential buyer and seller, all four of whom are potential up to the point of time where two become actual. When these two become actual then the next four who are nearest agreement become potential, then two of them become actual, and so on

until the market is cleared of commodities, buyers and sellers. Hence the actual choice is between the two who are nearest to becoming buyers and the two who are nearest to becoming sellers.

Here is where economic persuasion or economic coercion come in, eliminating from consideration that "duress" which is physical fear. Persuasion would need to be defined in such a way as to indicate two alternatives for each prospective buyer and each prospective seller each of which is advantageous, and coercion as two alternatives, one of which is oppressive and the other relatively non-oppressive or advantageous. Evidently this distinction is a matter of opinion. The only practical method of drawing the distinction in actual cases, and the one historically adopted in the common law, is the deliberation of a "jury of peers", by which is meant a set of men with similar customs, ways of thinking and acting under similar circumstances. Evidently this method reaches different results at different stages of civilization, from the time when men of violence were dominant to the time when men of peace are dominant, or when capitalists are dominant to when unpropertied wage-earners are dominant. In the former cases neither physical duress nor economic coercion are given such recognition as they afterwards are when men of peace or men without property are dominant. The weaker persons, physically, economically, or politically, would not get what they might call justice, or freedom from coercion or duress, when the juries are automatically packed with peers of the strong, rich and dominant.

At any rate, these distinctions and human-interest problems had no place with Macleod, although the common law

was full of them, because he, like the physical economists, abstracted from everything of human interest and made his science only a physical science of the exchangeability of commodities.

It is not because these distinctions are not measurable in terms of money - they are just about as measurable as exchange-value, upon whose measurability Maelood based his criterion of a science. This measurability can be seen from the formula of a transaction involving two buyers and two sellers, as follows, using chance figures for illustration.

Formula of Scarcity Value

Buyers	---	B	B ¹
Bid	---	\$100	\$90
Asked	---	\$120	\$130 ₁
Sellers	---	S	S ¹

Here B is a stranger buyer than B¹, offering \$100 instead of \$90, and S is a stronger seller than S¹, offering to take \$120 instead of \$130. These are various scarcity-values as judged respectively by each of the four, relative to his own situation in the market. But the issue between them and the subject-matter of their transaction is Value, of which there are three functional dimensions, use-value, scarcity-value and futurity discount. This makes the actual value agreed upon highly problematical, for it may be a larger or small quantity of better or worse use-value measured by physical units and qualitative grades; a high or low scarcity value measured by scarcity units of money; and a high or low futurity discount measured by the rate of interest.

If these three dimensions of Value are assigned to three specialists or classes of specialists, who devote themselves respectively thereto, then it will be seen that Value is a highly complex socialized phenomenon. Use-value is imparted by labor to commodities, and by governments to the money which pays for the commodities. These are specialists in usefulness. Scarcity-value is dominated by business men, the specialists in scarcity. Futurity-discount is in the hands of bankers, the specialists in credits and debts. The three are, of course, inseparable, and the Value, which is the subject matter of this abstract formula, is highly variable according to the changing activities of each. For present purposes, use-value and futurity-discount are assumed to be constant and we attend to the variability of scarcity-value, the transactional counterpart of Macleod's and the economists' physical exchange-value.

It will be seen that out of the foregoing formula of scarcity-value, three different economic relations appear for each of the four participants, and that each has a part in determining the resultant scarcity dimension of Value. These also are inseparable and functionally related, in that a change in any one will change the other two, and hence will change the scarcity-value which is the juncture of the three.

First is Choice of Opportunities, each one of the four parties to the transaction being confronted by alternatives owned, withheld or offered by two of the others. Thus the

seller S and seller S^1 can choose between buyers B and B^1 ; or buyers B and B^1 can choose between sellers S and S^1 .

Second, Competition. Buyers B and B^1 are actual competitors, and sellers S and S^1 are actual competitors. Potential or possible competitors are not included in the formula, because they do not enter until a buyer-seller pair is off the market.

Third, Economic Power, bargaining power, purchasing power, buying power, selling power, the exchange-value of Macleod and the physicists. Seller S or seller S^1 may sell to buyer B at \$100 or to buyer B^1 at \$90, and reciprocally, buyer B or B^1 may purchase of seller S or S^1 . The price is the measure of economic power.

Hence, for each of the four participants there are three scarcity dimensions of the scarcity function of Value, namely, Opportunity, Competition and Power. It is evident that each of these dimensions is limited for each participant by each of the dimensions for the other participants. Each impinges upon the others. The money-value obtained by S from B is limited by the competition of B^1 against B, by the relative buying and selling power of B and S, and by the competition of S^1 with S. Thus S cannot force B to pay more than \$130, or wherever S^1 , the competitor of S, would intervene; nor can B force S to accept less than \$90, or wherever B's competitor, B^1 , would intervene. That is, S cannot force B to pay a price above his next best opportunity set by competition of S^1 , and B cannot force S to accept a price below his next best opportunity set by competition of B^1 . But between the upper

and lower limits - \$130 and \$90 - the superior bargaining power of B or S may force S or B.

From this situation it follows that ethical or legal considerations, entertained by those of the same class (ethical), or by the judicial officers of the state (legal), begin to impinge upon the liberty of one or more participants in the transaction. The grounds of this interference by concerted action have been slowly developed in the common law by the decisions of courts, under the three names, Discrimination, or Inequality of Opportunity; Unfair Competition, or Infringement upon one's market; and Unreasonable Value, or Undue Exercise of Economic Power. The three are inseparable, each being one of three functional dimensions of Scarcity-value, and, for this reason, ethical and legal interference does not readily make the distinction until long after flagrant evils in individual cases have been perpetrated; and economic theory never makes the distinction so long as it adheres to physical concepts of exchange, or individualistic notions of natural equality, or theological notions of a natural right to do as one pleases with his own, these being the pertinent assumptions of the physical and hedonic economists. The distinctions arise only when the formula of a transaction is substituted for commodities, for isolated individuals, and for inalienable rights.

Illustrative cases out of the common law may be cited. The good will and trade-mark cases, which are cases of unfair competition, began to arise in the 17th century out of the original doctrine of perfectly free competition enforced by the common law courts of the nobility upon merchants,

manufacturers and laborers. But with the rise in political power of merchants and manufacturers in the 17th century the older doctrines prohibiting restraint of trade began to be modified into a doctrine of reasonable restraint of trade, in order to protect against competition those who by their own efforts or by purchase of a going business, had acquired an expectation that customers would willingly return to them. These considerations were not important for, and even were hostile to, the feudal nobility whose interests were those of consumers. Thus "fair" competition, insofar, took the place of "free" competition, until goodwill has become that huge asset of business which Macleod classed as "incorporeal property", but which we name intangible property.

The functional relation of fair competition to choice of opportunities may be noticed in the formula. If S, a seller, and all sellers, are prohibited from cutting prices below those charged by S¹, because the latter is entitled to the good will of buyers, then the buyers have no advantageous alternative but must pay the prices asked by S¹. Thus fair competition for sellers, which condemns the "price-cutter", wage cutter or "scab" as unethical, operates to restrain the liberty of competitors, to increase the economic power of sellers and to narrow the choice of opportunities of buyers.

The inverse applies to buyers. It is deemed unethical by employers that one of them should raise wages above the going rate, and the supreme court holds that laborers cannot be persuaded by a union of workers to leave their employer, because he is entitled to their good will. ¹ Thus fair

1. Hitchman case.

competition for buyers restrains their liberty to pay higher prices than others, increases their economic power and narrows the choice of opportunities of sellers.

Likewise with Discrimination, or inequality of opportunity. The Standard Oil Company, in Wisconsin, put into effect a quantity discount on gasoline for large purchasers at any of its 300 stations, combined into one monthly statement, which smaller competitors could not meet because they did not have enough stations. Complaint was made both by farmers and automobile owners who paid higher prices than the big corporation buyers, and by gasoline competitors who could not reach the big buyers by a similar discount. Thus unequal opportunity for buyers was unfair competition for sellers and economic power for the Standard over small buyers. The Standard Oil Company finally, desiring to live on friendly terms with competitors, withdrew its quantity discount, and this ethical sanction of concerted opinion, by restoring fair competition, restored also approximately equal opportunity and reasonable price. By doing so, the issue was "kept out" of the Federal Courts and out of "politics".

The courts, indeed, are slower than ethical opinion, in recognizing the fine distinction between economic power and discrimination. The Standard Oil Company was far from being a monopoly, since it sold only 30% of the product in the State. It was not on the ground of monopoly that it yielded to ethical opinion - it was on the ground of unfair competition and discrimination. Monopoly, in itself, signifies a high price for all buyers; Discrimination signifies a low price

to favored buyers. The two are not inconsistent and may go together. The common law of rich consumers was always against high prices of monopoly, but could see no injustice in the low prices of discrimination. The reason for the lag is plain. It is the individualistic point of view instead of social consequences, carried over from the time when an individual was really an individual to the time when an individual is a going concern. Two cases from the Federal Supreme Court will illustrate the reasoning and the lag. In 1897 the court stated, in a case where a railroad company was charging lower freight rates to Nebraska farmers than to Iowa farmers, that the discrimination was not unlawful at common law, and the test was, not social consequences, but the liberty of the railway company to reduce its private earnings if it wished to do so. The court said:¹ "Suppose that the officials of the company had charged the plaintiff only a reasonable rate² and at the same time had, without any just occasion therefor given to his neighbor across the street free transportation, thus being guilty of an act of favoritism and partiality - an act which tended to diminish the receipts of the railroad company and to that extent the dividends of the stockholders. Such partiality on their part would not, in the absence of a statute, have entitled the plaintiff to maintain an action for the recovery of the fare which he had paid and thus reduce still further the dividends of the stockholders." Such was the judicial concept of

1 Parsons v. C. & N. W. Ry. Co., 167 U.S. 447 (1896) at p. 454.

2 i. e., non-monopolistic.

unequal opportunity in 1897. It was a private affair of self-interest, without social consequences upon competing buyers of the service.

Four years afterwards, the same court by the same justice (Brewer) sustained an action of a newspaper company against a telegraph company which was charging its competitor a lower price for news service. The court now changed its interpretation of the common law, and declared that, without a statute, but "under the common law", the rates must not only be reasonable in themselves,¹ but must be "relatively reasonable"; no rate should be lower than another "without a just and reasonable ground for discrimination"; and discrimination was reasonable insofar only as the difference in rates corresponded to a difference in costs and conditions of rendering the service.² In other words, between the years 1897 and 1901 the Supreme Court changed the meaning of the common law to include an unreasonably low price as well as an unreasonably high price.

From our formula of a transaction the functional relations of the two may be seen. By discriminating in favor of one buyer the telegraph company's earnings, or economic power, are reduced; and the competing newspaper is able to practice unfair competition. By discriminating against one newspaper the other newspaper practices unfair competition; and the telegraph company's economic power over one paper is reduced, and over a competing paper is increased. The distinction also between monopoly and discrimination is evident. The

¹ i.e., non-monopolistic.

² W.U. Tel. Co. v. Call Pub. Co. 44 Neb. 526, 337 (1895) 58 Neb. 192 (1899); 181 U.S. 92, 102 (1901).

unequal opportunity may be discontinued either by reducing the high price to the level of the lower, thus reducing its economic power, or by raising the low price to the level of the higher, thus increasing its economic power.

Thus the economic aspects of the formula of a transaction are inseparable from the ethical and legal aspects. The economic subject-matter is Value, a functional relation, highly variable, of use-value, scarcity-value and futurity discount, each one of which has its independent sources of variability, but all of which focus together in that functional relation of four typical parties for whom the subject-matter, Value, is the expectation and inducement to enter the transaction and to continued repetition of transactions which constitute Custom and Going Concerns. And a further variability of Value arises from this confluence of participants whose variability takes the social forms of equal or unequal opportunity, fair or unfair competition, reasonable or unreasonable economic power, all of which, since they are variables of the scarcity function, are measurable in money.

Out of this complexity arises the psycho-economic activity of persuasion and coercion, persuasion being evidenced by equal opportunity, fair competition and reasonable price, but coercion being discrimination, unfair competition and unreasonable price. The general underlying and simple principle, corresponding to force in physics and life in biology, is various degrees of Willingness from persuasion to coercion. And it is because Macleod and the Physical economists start with only two of the many parts which make up the total

Willingness, namely Desire and Exchange, that it is impossible for them to have, as the foundation of their science, that view of the entire personality of human beings required even moderately to understand modern economic problems in their baffling complexity.

2. Ethical and Legal

Besides the economic parts of transactions, there are therefore the ethical and legal parts functioning with them, and these require an enlargement of the formula in order that the transaction may be seen as a "whole" and not as debris. These ethical and legal parts turn on an enlarged meaning of Macleod's term, a Right, just as the economic parts turn on enlargement of his term Exchange. Where Exchange becomes Transactions, a Right becomes Right, Duties, Liberties and Exposures. This enlargement is drawn from Hohfeld's analysis but requires interpretation in order to connect with Macleod's corporeal, incorporeal and immaterial properties in their functional relations to the economic parts of transactions. This re-statement confirms even more strongly the need of a term no less than Willingness to indicate the unifying principle which holds together the legal, ethical and economic parts that make up Transactions and Concerns.

Every Right of one person has its correlative Duty in one or many other persons. Macleod converts this legal relation into "economic quantities" by giving to the Right the name of Credit, and to the Duty the name of Debt. But he rightly asserts

that the Right is a personal right and the Duty a personal duty, thus separating the Credit and Debt as economic quantities from the individual wills of the parties.¹ The debt can be bought and sold, thus transferring the Credit from one person to a successor, although the debt does not physically come into existence until the time when the duty requires performance. This also separates the debt from the person of the debtor during the interval, and he can go on using his physical property, from whose product he will pay his debt, as though he were not in debt. Several considerations must be observed upon the foregoing.

First, as above indicated, both the right and the duty, the credit and the debt, are in existence now, and actually show themselves as assets and liabilities upon the books of merchants, manufacturers, speculators and bankers. If they keep no books they are still there, though unrecorded. They are in existence now, just as all expectations are in existence now, in that all rational human beings act, not only on impulses, stimuli, or instincts buried from the past in their physiology and environment, but upon more or less intellectual forecasts of the more or less immediate or remote future. They act on assets and liabilities. In fact, political economy, distinguished from engineering economics and home economics, is the science of assets and liabilities.

Second. But assets are of two kinds - expected money income from debtors and expected money income from buyers on

¹ Elements I: 233.

the capital and commodity markets. So that assets are correctly termed Values in that they are the variable functional relations of use-values, scarcity values, and futurity-discount. So, also, with Liabilities. A business man or a going concern separates liabilities from persons, just as Macleod asserts. The "business" itself is even personified by book-keeping as a going concern, in that it "owes" to the proprietor, or, if incorporated, it "owes" to stockholders and bond-holders, certain money known as its liabilities.

This is indeed the very advantage of Capitalism over every other form of society - it separates assets and liabilities of the person from his personal rights and duties, merely by converting intangible Futurity into a negotiable instrument. His duties surely do not come into existence until they are due - meanwhile he is at liberty to do as he pleases, - a situation pointed out by Turgot when he distinguished the Capitalist, who is free as to his person but not free as to his capital sunk in the business, from the laborer or peasant who is not free as to his person, insofar as he must be continuously "on the job".¹ Modern capitalism has developed this separability into a luxurious parasite - Absenteeism - which raises grave questions of taxation, on the one side, and shorter hours for salaried and wage job-holders, on the other. Assets and liabilities are indeed intangible but yet economic entities, since they are the expectations of going concerns on expected commodity and debt markets and are therefore

¹ Above p. 000.

separable, during intervals; from personal necessity to be continuously on the job watching his rights or obeying his duties.

Further, this is the very reason why so-called "institutional economics" with its principles of futurity and willingness, is required in place of commodity economics or hedonic economics. In these latter theories the individual is metaphorically tied to the commodity by a functional action and re-action of pains, pleasures and diminishing utility, doing what the animated commodity does, and there is no place permitted by the theory for personality. Only when rights, duties, liberties, exposures, transactions, going concerns, with their principles of futurity and willingness, take the place of commodities in the theory, can personality be truly separated from a materialistic analogy to physical sciences. Otherwise ethics or law must be, and is, brought in on a remorseful postscript, with the resulting well-known dualism of economics and ethics. Macleod, though he made the distinction between the personality of duty and the economic quantity, a debt, yet, by treating debts as commodities, he necessarily treated duties as commodities inseparable from debts, and subject to the same laws of supply, demand and price previously and subsequently worked out by the commodity and hedonic economists regardless of personalities, rights or duties.

This is seen in Macleod's contention, afterwards seized upon by Knies, that credit was an economic "quantity" and

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not a "transfer" of capital nor an "operation".¹ His "credit" was a debt, created independently by a debtor for his own profit, like any other commodity, yet in the form of a promise to deliver money, or commodity, or service at a future time. And this credit, under the economic law of supply and demand and the legal law of negotiable instruments, became itself a commodity which could be used in exchange for other commodities. But Knies defined credit as an "exchange", wherein the performance by one person, the creditor, occurs now, and the performance by the other person, the debtor, occurs after a lapse of time.²

Credit is, indeed, a transfer, an exchange, an operation, as Knies maintained, but it is also a commodity, as Macleod maintained. It is specifically made, by the law of negotiability, into something as nearly like a physical commodity, money, as possible. But it comes upon, not a commodity market, but a debt market. And it is not "manufactured" for sale by the debtor any more than money is manufactured for sale by him. It is a transaction, participated in by not only the business borrower and lender, but also by their respective bankers, in expectation of future commodity-markets and debt markets. It is a transaction that determines how much or little commodities and plant equipment shall be produced in the interval and at what prices, in joint expectation of future production and future prices.

¹ Elements 1:103.

² Knies, Carl, Der Kredit, 1:63 ff. (1876).

By their physical analogies, not distinguishing the debt market for intangibles from the commodity market for tangibles, both Macleod and Knies failed to separate the joint volitional process of expectation from the two physical concepts of a commodity and its exchange. The present volitional process throws the physical process into the future. The credit transaction creates, not a commodity, but an expectation, in the form of a creditor-debtor relation, and such an expected buyer-seller relation as goodwill, and it is these expectations, separable from the personalities of the parties, which bankers and investors buy and sell on the debt and expectation markets. The expectation is legal control of physical things and other persons. The whole subject-matter shifts entirely from a field where physical analogies can be of service into two fields moving forward tandem-like, where the joint action of human wills in a concerted expectation of the more or less distant future, determines what shall be done in the immediate future. Not the concepts of commodities and exchanges in the moving present are enough, but concepts that tie together the moving future to the moving present, such as transactions and going concerns animated by their concerted willingness.

Third. These expectations are ethical and legal as well as economic. They depend upon the expectation of a concerted opinion that will enforce rights by holding individuals to their duties, and then, if this is not enough, upon expected concerted action of another concern, the State. It is this latter that Macleod's and the lawyers' "right of action". Does the right of action arise only upon the occasion of an operative fact, such as violation of duty, as Macleod contends,

or does it now exist by expectation for both creditor and debtor? What a creditor buys from one creditor and sells to another creditor is, according to Macleod, only a right of action. It is not the promissory note, a piece of paper, that is bought and sold - it is the present expectation that the courts will enforce contracts and other property-rights. The reason why capitalists will not invest in Russia is because there are no capitalistic courts which will do this, and no ethical opinion strong enough to set up such courts. Of course, then, rights of action do exist now, by expectation, exactly like assets and liabilities. And they exist now for the debtor as well as for the creditor. It is these legal expectations of rights of action that make possible the economic expectations of assets and liabilities - and, indeed, the very existence of capitalism. By the device of negotiability whose marvel and importance Macleod did not exaggerate, these mere expectations of legal procedure are bought and sold.

Fourth. Since assets are two kinds of expected money-incomes - debt payments and price-payments - an analysis must be made of Macleod's double meaning of debt and duty, equivalent to his double meaning of credit and right and Turgot's analogy of pledge. This analysis must be the same as that which Hohfeld has made of the several meanings of the word "right" as used in judicial and legal reasoning, and Hohfeld's insight applies to the lawyer Macleod who carried over into economics the lawyer's ambiguous meaning of rights. All

1 Salmond in his "Jurisprudence" had previously made the same analysis of rights as Hohfeld, and to him belongs priority. But Hohfeld builded a whole system of reasoning on the distinctions, buttressed it by inductive study of the cases,

rights have their correlative duties somewhere, somebody. A right cannot be created except by imposing a duty. If the duty is not imposed then the right does not exist. Now this "no-right" and "no-duty" is just as important, in law and economics, as right and duty. Dialectic lawyers may contend that a "negation", such as no-right and no-duty, is meaningless, for a negation includes all the rest of the universe indifferently. This contention leads to separation of the law, as an abstract mental exercise, away from the practical problems which are the content of the law - indeed the only reason for the existence of law. A person confronted by a plaintiff and the officers of the law is much concerned to know whether, in that crisis, he has a duty or a no-duty. And the plaintiff also, with his assets threatened with dissolution in bankruptcy, must know whether he has a right or no-right, not respecting the universe at large, but respecting that opposite person whose liabilities are his assets.

It needs, therefore, only a set of appropriate words to bring this no-right and no-duty down to earth from the infinite universe. A no-right and its no-duty are simply the absence of right and duty in that particular case and crisis. Hohfeld has pointed out a time-honored legal word which means exactly

and put it in such logical form that it can be used and applied by others. Thus did Alfred Russel Wallace discover Darwinism in one night, after reading Malthus, but Charles Darwin, who also got his Darwinism from Malthus, took twenty years and thousands of cases to make the world accept it. It is Darwinism, not Wallaceism. Gossen discovered marginal utility in 1854, and Jevons in 1862, but it is "Austrian" economics that discovered it in 1871.

no-duty in that particular dispute - the word "privilege".
A privilege is the absence, the negation, of duty insofar as
that alleged duty is concerned.¹

But there is another time-honored word in both law and economics that means privilege universalized and popularized - the word Liberty. Liberty means nothing but no-duty - therefore do as you please and can. In economics it means free competition, free choice of opportunity and free use of economic power.

Hohfeld did not have a word, though he suggested several, which might be substituted for his infinite "no-right" as the negation of right and the correlative of Liberty. But Salmond suggested such a word - Exposure. I am exposed to the sun's rays, beneficially or injuriously, according to circumstances. So, I am exposed, beneficially or injuriously, to the free action of other persons, if they are at liberty to persuade or coerce me. If they have a duty not to coerce me, then I have that equivalent right to be "not-coerced".² But they may still have a liberty to persuade me, beneficially or injuriously, and my exposure to that liberty is exactly equal to their liberty.

It is this very distinction between persuasion and coercion, between right and no-right, that causes to arise in economics and law the meaning of good-will, which Macleod mistakenly pictured as a debt and which business men and courts, at times, also attempt to clothe with attributes of

1 See below, p. 000, Formula of a Transaction.

2 See article by Brandeis and ? on Privileges of Personality.

debt and compulsion.¹ It is not a debt, with its ethical relation of right-duty and its economic relation of creditor-debtor - it is the very negation of debt, with its ethical relation of liberty-exposure and the economic relation of buyer-seller. Good-will has arisen historically by the negation of duty and compulsion, which negation is the same as an assertion of liberty and immunity.² The slave is under a duty to serve his master, but the Thirteenth Amendment gave the freeman liberty to run away. This converted the right of the master into an exposure equal to the freeman's liberty. The "master" has a right to the service of his slave, but the "employer" is exposed to the liberty of his employee to quit.

Now, then, are the two held together for their joint advantage in the success of the going concern? Nothing but willingness holds them together. And willingness becomes the valuable goodwill of expected persuasive transactions - the biggest and best asset of capitalistic business.

Similar historical changes have occurred in the case of debts properly so-called. The strictly individualistic assertion of rights, which came over from the Roman law into modern individualism and was taken up by Macleod, rested on the most extreme right of action, even to imprisonment of the debtor. But the 19th century, looking to social consequences as well as individual rights, by its many exemption and bankruptcy laws, caused liberty to encroach on duty, and so

1 Legal Foundations, p. 000. Hitchman case.

2 See Holmes article.

Macleod's "His Credit" becomes, not "a credit" with its right-duty relation, but "a good credit" with its liberty-exposure relation, the valuable expected persuasive transaction which constitutes the good will of bankers and investors.

Fifth. For these reasons it is plain that Macleod's "incorporeal property" has a double meaning, which may be typified by the contrasted meanings of Debt and Good-will. These we distinguish as Incorporeal Property and Intangible Property, the latter term taken from opinions of commissions and courts in public utility cases. Incorporeal property is the expected net money income to be derived from a debtor in payment of a debt. Its economic relation is creditor-debtor; its ethical and legal relation is right-duty. But intangible property is expected net money income to be derived from buyers of commodities and services. Its economic relation is seller-buyer; its ethical and legal relation is liberty-exposure. Each kind of expectation is valuable in the present, as Macleod recognized, but the one is valuable as the expected payment of debts, the other as the expected sales and purchases on the commodity markets and the debt markets.

This distinction enables us to distinguish also Macleod's "corporeal" and "immaterial" properties. The two are curiously similar. His corporeal property, in the sense in which he uses it, is not corporeal - it is intangible, for it is the present right to sell the corporeal thing, which he owns, upon the real estate or other commodity market. But the term corporeal property, as we have noted, is also given by Macleod a narrower meaning, in that it is the present right

of the owner to have and use for himself the physical products expected from his land or other physical capital. This meaning may properly be named corporeal property, because it is expected use-value, whereas the "intangible" element is expected scarcity-value on the markets. The same physical capital has the two aspects. As "intangible" property it is assets depending on the expected scarcity-values of the markets; but as "corporeal" property it is simply expected use-values regardless of what it is worth as assets. A business firm, during a slump in prices, does not lose its corporeal property - it retains the same quantity of use-value measured by tons, yards, and so on. But it loses its assets, its intangible property - the expected scarcity-values of the same physical things, but measured now by dollars. Its "property" remains, but its assets are gone. Or rather we should say, its property in use-values remains but its property in scarcity values is gone. Property in use-values is corporeal property and belongs to engineering economics; property in scarcity-value is intangible property and belongs to political economy.

Macloed's "immaterial" property is also to be classed as intangible, and treated in the same way as his corporeal. His immaterial property is the human abilities - manual, mental, managerial - belonging to the individual and salable. If he uses his abilities solely for his own use, without regard to selling his services, the term "immaterial" is perhaps allowable, on analogy to the term corporeal. It is

the use-value of his abilities.¹ But if he sells his services on the labor market then the expected income is the scarcity-value of the same abilities, now to be known as his intangible property. His abilities are his assets. The labor market is similar to the commodity market and the credit market - it too is an expectation of transactions turning on relative scarcity-values. And it is because this expectation of scarcity-values is deemed to be property that the American courts, within the past forty years, have extended the inductive process to the employer's right of access to a labor market as one of his property-rights.² It also may be considered a property of the laborer, in which case his "job" is his property - his going business - consisting in his expectation of a daily and hourly repetition of beneficial transactions with his employer. In all cases, intangible property is, in ethics and law, an expected reciprocal relation of liberty and exposure, and, in economics, an expected repetition of scarcity-values of transactions.

Sixth. From these considerations it will be seen that Macleod's notion of Duty requires analysis as to the kind of behavior expected of one on whom the duty rests. And this requires further distinction between opposite legal relations and collateral legal relations. Opposite relations are the creditor-debtor relations of incorporeal property and the buyer-seller relation of intangible property. They are

1 Not the subjective utility of hedonism but objective use-value of engineering economics.

2 Commons and Andrews, Labor Legislation, p. 000.

rights, in the one case, and liberties, in the other case, of performance. But collateral relations are negative - their right-duty relation is the right-duty of "omission", that is, non-performance, non-interference.

Here, however, it is necessary to find economic dimensions of the human will in order to connect the legal with the economic functions that make up the transaction. The usual legal distinction between an "act" and an "omission" is inadequate, because these refer only to a specific case at law, and take no account of the economic alternatives imposed on the individual, when he is compelled to "omit" an act. Each act is a choice of alternatives, and if the individual is to be looked upon as a whole and his personality to be preserved as a unified being, his will itself must be defined so as to take in all present and expected alternative acts, and, indeed, all that we have indicated by the economic dimensions of opportunity, competition and power. If this is done then it will be found that every act of a human being is, at one and the same time, an act of three physical and economic dimensions - a performance, an avoidance, a forbearance.

On the legal side, a lawful performance is a legal tender of money, or legal delivery of quantity and quality of commodity or service, or lawful alienation or acquisition of title, all of which are comprehended as the active part taken by individuals participating in transactions. They are "acts". As such they are, on the legal side, either a legal duty in the case of debts or a legal liberty in the

case of markets. But, on the economic side, the performance, or act, is some portion or all of that activity which furnishes to others a part or all of that object of Value whose functional parts are use-value, scarcity-value and futurity-discount. It is performance, then, willing or unwilling, that connects the legal and economic dimensions of transactions, and is both a legal duty of liberty, and a constituent dimension of economic value.

But a performance is, at the same time, an avoidance, rather than an "omission". Avoidance is the fitting word, because, owing to the fact that the will is a living organism of the whole active body and mind, it must act, and therefore, if it is compelled to "omit" all other acts it must choose that one performance not omitted. This is the economic necessity of choosing, enforced upon a living organism. Furthermore, omission includes all the rest of the universe, but avoidance refers to the next immediate alternative. It is upon this economic necessity of choosing between alternatives that the courts often enforce indirectly the duty of "specific performance" by enforcing a duty of avoidance of all livable alternative performances. It is unlawful, under the Thirteenth amendment, for the court to command the specific performance of working for a specific employer, but by injunction against working for any competing employer, no livable alternative is left but to work for the specific employer. On the legal side, too, it is the duty of avoidance that runs against all collateral persons above mentioned, and this means that, if they must avoid interference with an actual or prospective

economic relation of creditor-debtor or seller-buyer, they find it economically compulsory, if alternatives are scarce, to engage in some other transaction, against which there is no duty of avoidance. Thus the worker who must not take another worker's job, or the business man who must not take another's customers, must find or make a job or business which he may take.

Finally, every performance is, at the same time, a forbearance, insofar as the person does not exercise his full physical or economic power. This, again, may be a duty or a liberty - a duty of forbearance, as when a public utility company is prohibited from charging more than a reasonable price, or a lender from exacting usury; or a liberty of performance or forbearance when a business man or laborer is permitted to use his own judgment as to how far he will go in exercising his physical, moral or economic power in a transaction. Thus a "forbearance" is not to be defined as an "omission" - it is a performance, restrained or regulated by self or by ethics or law.

Seventh. If we attempt to bring together in a typical formula these various functional acts and expectations of a transaction, the formula will, unfortunately, be complex and detailed compared with the simple-minded formula of a physical exchange of the physical and hedonic economists. The attempt is made in the following "formula of a transaction", wherein the unifying principle, willingness, is supposed to exhibit itself in individual and collective action, present and expected. The formula applies to any of the three dimensions

of the will-in-action, whether performance, avoidance or forbearance. It is supposed to apply to all kinds of collective action, whether of custom or going concerns, operating on individuals through working rules, and whether their sanctions are the moral sanctions of collective opinion, the economic sanctions of gain or loss, or the physical sanctions of sovereignty. In other words it applies to "legal" and "extra-legal" sanctions, the latter being ordinarily known as ethical sanctions. It applies also to all individuals participating in a bargaining transaction by way of Inducements to other individuals. The managerial and governmental transactions require later modification. It includes the evident fact of the credit system in that the bankers, who buy and sell, on the debt markets, the negotiable promises created by the participants in transactions on the commodity markets, are themselves therefore also more or less active participants in the commodity transactions.

Here the focus of the Transaction is Value in its variable dimensions of Futurity, Usefulness and Scarcity, attributed to tangible things and human services, the tangible things being themselves also expected human services to be furnished indirectly through physical materials. The measurable quantity of the present value is determined by the opportunities offered by the sellers to the buyers and by the buyers to the sellers; by the competitors of buyer with buyer and seller with seller; by the relative economic power of each to withhold his commodity or money; and by the discounted expectations of future production and prices,

Formula of a Bargaining Transaction

(Performance, Avoidance, or Forbearance)

Collective Working Rules (Sanctions)				Individual Actors (Inducements)		Collective Working Rules (Sanctions)		
Possible Plaintiff				Banker	Banker	Possible Defendant		
Expected Collective Action	Indiv- idual Status	Indiv- idual Expecta- tion				Indiv- idual Ex- pecta- tion	Individ- ual Status	Expected Collec- tive Action
Noun	Verb							Verb Noun
Ability (Power)	Can	Security	Right	Payer \$100	Buyer (Opportunity) (Competition) \$90	Duty	Conform- ity Liberty	Must Must May
Dis- ability (no power)	Cannot	Exposure	No Right	Power	VALUE (Expectancy) (Usefulness) (Scarcity)	No Duty		Liability (Compul- sion) Immunity (no com- pulsion)
Immun- ity (no com- pulsion)	May	Liberty	No Duty	\$120 Seller	\$130 (Competition) Seller ¹	No Right	Exposure	Cannot (no power)
Liabil- ity (compul- sion)	Must Must not	Conform- ity	Duty	Banker (Opportunity)	Banker	Right	Security	Can (Power)

evidenced by the credit advanced by the several bankers through the purchase and sale of the debts incurred in the transaction.

This quantity of Value is also determined by the collective working rules which regulate the performance, avoidance or forbearance of individuals, whether these rules are laid down by custom, by court decision in formulating the common law, by commercial or industrial arbitration, by administrative or managerial orders of a superior addressed to an inferior, or by statutes of legislatures or other constituted boards of directors. Consequently these working rules go further than that which Macleod designates a "right of action". They include all collective action, even the unorganized action of custom, known as ethics, with its purely moral sanction of opinion, and the organized sanctions of all going concerns whether economic or legal. For this purpose, the legal term "action" is given a wider meaning than its technical legal meaning. It means all collective action which brings moral, economic or legal pressure on individuals. This conforms to legal terminology. The narrowest legal meaning of "action", as stated by Bouvier, is "the formal demand of one's right from another person, made and insisted on in a court of justice". A wider legal meaning of "action" includes "all the formal proceedings in a court of justice attendant upon the demand of a right made by one person of another in such court, including an adjudication upon the right and its enforcement or denial by the court".¹ The

¹ Bouvier, Law Dictionary, title "action".

still wider meaning, which we employ, includes all "extra-legal" adjudications of commercial and industrial arbitration, and, even wider still, the moral and economic pressure exerted by "business ethics", trade union rules, trade agreements, the "live-and-let-live" and "follow-your-leader" policies of modern business and unorganized labor, which we comprehensively name "custom" - in short, the legal term "action" is extended to all expected collective action.

These expectations of collective action are analysed by Hohfeld as certain Powers, Disabilities, Immunities and Liabilities of individuals, usually confused, as he says, with rights, no-rights, no-duties and duties. But their meaning is quite different. A "power", says Hohfeld, is the legal capacity which one has to "change" the legal relations of self or others, as when a title of ownership is alienated and transferred to another by not only an owner, but also by a guardian, a trustee or agent who does not have the rights of ownership. It includes powers of appointment, power to acquire title, the powers of public officials and similar authority conferred by law to change the rights, duties, liberties and exposures of individuals. The nearest synonym of power, says Hohfeld, is legal ability, the negation of which is legal disability, but the correlative of which is legal liability of an opposite person to the change in legal relations, the correlative of disability being immunity.

These are terms applied by Hohfeld to private law, but if we pass to public law, or the law of the constitution, which lays down the powers of public officials, we find that

these terms may be given a constitutional meaning regulating the performance, avoidance and forbearance of constituted officers, as when the constitution of the United States prohibits a state, that is, state officials, abridging the privileges or immunities of citizens of the United States or depriving any person of life, liberty or property without due process of law. This "depriving" of life, liberty or property is, of course, depriving of the rights and liberties of life or property. And this "abridging" of privileges and immunities is abridging the legal ability (power) of the citizen to call upon the officials of the State in an action to safeguard his rights or liberties, or abridging the immunity of the citizen from action by officials in depriving him of rights or liberties.

The behavioristic situation is made apparent by the auxiliary verbs proposed by Corbin and the Yale law faculty, and these are arranged in our formula of a transaction along with the nouns which give names to the activities. Thus, if a person has legal "ability" he has legal power or legal capacity, expressed by the verb "can", in that he can call upon collective action to assist him in enforcing alleged duties upon opposing persons. The situation of the opposite person is one of liability to compulsion by reason of which he "must" or "must not", and this means compulsory performance, avoidance or forbearance. The other terms follow logically. Disability is "no-power" - he "can not" have the aid of officials, and, if he can not, then the opposite person enjoys immunity from collective compulsion, by reason of which he "may" perform, forbear or avoid as he wishes.

It is evident that if these extension of Hohfeld's analysis to the field of constitutional law and collective action is allowable in the case of the State and all its agencies up to the police, the sheriff, the constabulary, the posse comitatus and the army, it is also allowable in the case of all collective action, whether the concerted but unorganized action of custom, or the organized action of corporations and other going concerns. The differences are in the procedure and the sanctions.

If, now, we apply to this situation the same analysis of future and present which we have found applicable to the meaning of Value, then this collective action is a possibility lying in the future, which is expected if necessary. As such, it is just as much present in the present activity of individuals as any other expectation. And this gives us the two present consequences of Futurity, the individual's "expectations" and his corresponding "status" or position within the going concern of which he is a member and participant. It is to these expectations that Right and Duty, with their negatives, no-right and no-duty apply. A right is an expectation that the "possessor" will have the ability or power to rely upon collective action to assist him in his transactions with other persons, and his duty is his present expectation of a liability to have collective action exert compulsion upon him. So with no-right and its correlative no-duty. It is an expected Disability or no-power to have the aid of collective action, and an expected Immunity or no-compulsion to be subjected to collective action.

And if the individual's position or status within the concern is given a corresponding name, then his right is his status of expectation that collective action does now and will afford him security in his transactions, if necessary, and this status of security is no greater or less than the status of conformity and its expected compulsion of the opposing person. But liberty is the status brought about by no-duty by reason of the expectation that collective action, whether by custom or organization, will give him immunity; and exposure is the correlative and equivalent status or position in which a person is left whose Disability indicates that he has no-power, and therefore cannot call upon collective action in that particular performance, avoidance or forbearance of an opposite person.

Thus rights and liberties are not something previously fixed in a metaphorical state of nature but are something expected in a state of collective action, and are as variable and changing as the different kinds and extent of that action. If all parties expect to be treated alike in this respect then each individual has a reciprocal and equal set of rights and duties, no-rights and no-duties. And even if they are not treated alike there is still reciprocity, but without equality, since each depends on others through transactions for his living. But it is unequal reciprocity, to be designated discrimination or unequal opportunity, unfair competition or extortion. These latter are economic "reciprocals" but not ethical "reciprocity". The economic status of any person within a transaction or going concern is nothing else than

these expectations.

This formula, it will be seen, is comprehensive enough to apply to all types of property-rights, whether corporeal, incorporeal or intangible. In order, then, to make the distinction between the incorporeal property of expected debt payments and the intangible property of expected market transactions, it is necessary to break the formula into three parts corresponding to the appropriate division of the will as a duty of performance, a liberty of performance or non-performance, and a duty of avoidance by collateral persons.

Taking, first, the Incorporeal Property of a reciprocal duty of performance, the psychological relation is command and obedience, we have two types of such duties, the duty of the debtor to pay money in consideration of the duty of the creditor to deliver a commodity; and the duty of the employer to pay wages in consideration of the duty of the employee to deliver a service. Each of these duties of performance comes into existence at the time when the agreement is made, and each performance is a resulting expectation coming into actual existence at a later period of time. The creditor is the one who makes his performance first, following the agreement, and the debtor makes his after a lapse of time. So that the employee is usually the creditor and the employer the debtor. If the time-position is reversed then the creditor-debtor positions are reversed. In either case there are two duties reciprocally created by the agreement. The typical formula follows:

Incorporeal Property
(Reciprocal Duty of Performance)

Collective Working Rules			Economic Actors (Command and Obedience)		Collective Working Rules		
Creditor or Employee			VALUE (Expected legal tender or delivery of money, commodity or service)		Debtor or Employer		
Expected Col- lective Action NOUN	Indiv- idual Status	Individ- ual ex- pectation			Individ- ual ex- pectation	Individ- ual Status	Expected Col- lective Action VERB NOUN
Ability Can Command	Security Right	Conform- ity			Duty Right	Conform- ity Security	Must Obey Can Com- mand
Liabil- ity							Li- abil- ity

Next, the Intangible Property of reciprocal liberty and exposure of performance upon any commodity market, any labor market, or any debt market, is the reciprocal free choice of opportunities and free competition, unrestrained by any rules of a governing concern, and the psychological relation is therefore reciprocal persuasion typified by the valuable economic expectation, the good will of a going business. Here there are no rights and no duties as between opposite parties, meaning thereby that the State or other collective action leaves to each a liberty of performance, forbearance or avoidance, and, reciprocally, leaves each exposed to the liberty of the other. This "intangible" property, as stated above, applies to Macleod's "corporeal property" insofar as it is the liberty - not the right- to sell the property on the market at its scarcity-value. And it applies to his "immaterial property", or labor, insofar as it means the liberty to sell his services, at their scarcity-value, upon the labor market. The formula follows:

Intangible Property
(Reciprocal Liberty of Performance)

Ethical and Legal Expectation			Economic Factors (Persuasion)		Ethical and Legal Expectation		
Seller or Buyer					Buyer or Seller		
Expected col- lective action	Individual	Individual	VALU (Expected voluntary sale and purchase)		Individual action	Individual status	Expected col- lective action
Noun	Verb	Action			Noun	Verb	Noun
Disa- bility	Can not exposure	No Right			No Duty	Liberty	May
Immun- ity	May	Liberty			No Right	Exposure	Cannot
							Disa- bility

Finally, each of the several kinds of property, corporeal, incorporeal and intangible, is secured for owners and participants in transactions by multitudes of reciprocal duties of avoidance running against all parties indifferently, including even the participants themselves, and, under constitutional law, against officials of the concern or the State. These are the "must notes" of the original and primitive custom of property and personality, the Ten Commandments of avoidance. They are "multital", in the words of Hohfeld, because, while they run against all persons indifferently, they give rise to a right of action only on occasion of an operative fact wherein a particular individual emerges from the multitude and trespasses upon the expectations of corporeal property, or infringes upon the expectations of intangible property, or obstructs the expectations of incorporeal property. In the case of corporeal property, whose value is the expected use-value of the physical object, the duty of avoidance is the duty of non-interference with its use by the owner, but in the case of its exchange-value it is duty of non-interference with access to markets. The same with all intangible property rights - that which must be avoided is obstruction or interference with participation in bargaining transactions. But in the case of incorporeal property it is interference with the duty of the debtor to pay money owed, or to deliver a commodity or perform a service owed.

These duties of avoidance are the rights to be "let alone" by individuals and the right of laissez faire by officials. They are the lawyer's rights in rem - the right

to a "thing" - including that intangible "thing", the expectation of transactions - against all the world, which became a right in personam against the trespasser, infringer, or obstructor, who emerges from all the world.

Plainly the duty of avoidance affects the expectations of value - in fact if there is no such duty whatever then there is no private property whatever, and all things become common. The formula is as follows:

Collateral Persons (Corporeal, Incorporeal, Intangible Property)
(Reciprocal duties of Avoidance)

Collective Working Rules (Possible Plaintiff)			Individual Actors (Command and Obedience)		Collective Working Rules (Possible Defendant)		
Expected Col- lective Action Noun	Verb	Status	Individual Expectation	Right	Individual Expectation	Verb	Expected Col- lective Action Noun
Ability	Can	Security	Right	Duty	Duty	Must Not	Liability
Liability	Must Not	Conformity	Duty	Duty	Right	Can	Ability

3. The Whole and Its Parts

We have derived eight meanings from Macleod's single meaning of "right", by distinguishing a transaction from an exchange and a commodity; by analyzing his notion of the future and the present; by distinguishing collective sanctions from individual inducements; by analyzing the dimensions of behavior called for in the meaning of duty; and by analyzing the meaning of economic value as connected with these meanings of rights. The eight meanings of right divide themselves into the following:

- (1) Corporeal property, the expectations of the use-values of things and services;
- (2) Intangible property, the expectations of the scarcity-values of things and services;
- (3) Incorporeal property, the expectations of debt payments;
- (4) Negotiability, the expectation of collective ability to change the legal control over things and persons;
- (5) Rights of action, the expectation of collective action in regulating individual action;
- (6) The expectations of three kinds of collective action, distinguished as ethical, economic and physical;
- (7) The expectation of three dimensions of individual or collective action, performance, avoidance or forbearance;
- (8) The expectations of variable economic values which are the subject-matter of the different meanings of rights.

The question of methodology arises, which we have hinted at: How can these various meanings of rights and values be reduced to a system of thought based upon a single principle which unifies them? Other sciences seek a unifying principle, which shall relate the parts to the whole in a consistent scheme of functional interactions. Macleod found his unifying principle for economics, as did the classical and hedonic economists, in the subjective principle of Desire, with its pain of unsatisfied wants and its pleasure of satisfying the wants. But he pointed out that desire is subjective and immeasurable and therefore he fixed upon exchangeability of commodities as the external measurable dimension of desire. His criticism is valid as against the hedonic economists, but not as to exchangeability. Desire, pleasure and pain are undifferentiated and make no distinction between the want for a tool, or a meal, or for justice, or for a debt payment, or for the good will of customers, laborers or bankers. As well solve the problems of economics by the attraction of gravitation as by the attraction of desire.

But a similar criticism holds against his exclusive attention upon exchangeability of commodities, in which, as he rightly says, he was merely following the physiocratic, classical and mathematical economists. Exchangeability eliminates all differences among commodities, and includes objects, like debts, which are not commodities except by metaphor. To get rid of metaphor we analyze the details which had previously been mixed by metaphor. We find, then, that the metaphor was taken over from a previously developed more simple science such as

physics or biology and can by no means compass the complicated details of economic science. Macleod took his metaphors from physics. Predecessors and successors have taken their metaphors from biology. But that which is not metaphor is economic institutions which we call transactions and going concerns. Even in physics and biology, as well as sociology, scientific method has advanced beyond the time of Macleod who knew neither the relativity of time and space, nor the evolution of life, nor the evolution of institutions. But modern science, influenced by these three discoveries, begins not with a simple general quality like desire of exchange - it begins with a unity of highly complicated parts. Whitehead remarks that 18th century science had no notion of the organic unity of the whole, such as now is implied in electrons, protons, molecules and living bodies. This was true also of most of the nineteenth century, at least in economics, and is seen in Macleod's statement of the requirements of an inductive science, which are indeed the requirements of the classical and hedonic economists.¹ The inductive method, he says, consists in searching for conceptions and axioms the most perfectly general, and such that no one of them involves more than one fundamental idea. Then by deduction, or logic, all of the degrees and variabilities of that general idea

1 See Henger, Carl. Methoden der Sozialwissenschaften (1883) and my comparison of Henger and Schmoller, in "Das Anglo-Amerikanische Recht und die Wirtschaftstheorie, in 3 Die Wirtschafts-Theorie der Gegenwart 293 (1928).

can be worked out. This general concept is a certain "quality" abstracted from all others, which in economics is wealth and whose measure is exchange-value.¹

Whitehead, on the contrary, in formulating the method of modern science, begins with the complexity of all the factors at a point of time² which he names an Event, and then combines events into a time-succession which he names an "organic mechanism". The "event" has the properties of retention, endurance, reiteration, and this, we may say, is, as it were, a cross section at an instant of time; but the mechanism is "organic" and is a kind of prolonged event having, as Whitehead says, a past, a present realization and a future life in its future events.³

Evidently when Whitehead injects the ideas "organic" and "future life" into a physical mechanism, such as an atom or the universe, he is introducing metaphors transferred from living creatures and the human mind. We need, therefore, to distinguish a physical mechanism from a living mechanism, more properly an organism, and an organism from the corresponding "social mechanism", a social institution, which we name a going concern. Whitehead's "organic mechanism" is, less metaphorically, a going mechanism; but a living body, from microbe to man, is a living and dying organism; while a

1 Macleod, Elements 1:27.

2 See also Smuts, Holism, and Akely Mss.

3. Whitehead, A. N., Science and the Modern World, 112 151, (1925).

social institution is a purposeful going concern. A mechanism is a succession of dead events; that which corresponds, in an organism, to an event is the metabolism which changes dead matter into living matter, and back again; and the corresponding "event" in a social institution is the transactions whose expected repetition and multiplication are a going concern.

If we seek for distinguishing principles upon which can be unified into a moving whole these different types of going mechanisms, we shall seek, not for an "axiom" for purposes of deduction, but for a characterization which will distinguish one from the other. For this purpose the principle of mechanism is blind pressure, the principle of organism is struggle for life, the principle of going concerns is concerted action for joint ends in the future. Or, stated more anthropologically, the principle of Mechanism is Energy, of Organism is Scarcity, of Going Concern is Willingness.

The reasons for seeking these unifying principles are found in the relations of the parts to the whole, and this is but another way of stating a doctrine of relativity. Each part performs a function in maintaining the existence of the whole, such that a change originating in one part is followed by changes in all of the others, and therefore by a change in the whole mechanism, organism or concern. These functional changes, going on among the parts, are themselves the events, metabolisms or transactions, and their repetition is the mechanism, organism or concern. Hence, by the terms Energy, Scarcity and Willingness is meant, not a substance nor

entity, but a generalization of related motions characterized as a "principle" or similarity running through all the changing parts and helping the mind of the investigator to keep their diversity together in a persistent form of unity.

A set of terms used in economics for this changing relation of the parts to the whole is "limiting and complementary factors". This is a concept of the changing relations of the parts to the whole when such change is brought about by the human will.

Since the time of Ricardo, with his formula of diminishing returns in agriculture - much more widely stated for all industries by Turgot - economists have sensed, piecemeal, the doctrine of relativity implied in limiting and complementary factors. Karl Menger, in 1871, advanced the doctrine decidedly by his formal theory of complementary goods wherein the scarce or relatively irreplaceable factor in a total complement of land, labor and capital, absorbs all of the value of a group left over after deducting the values of displaceable factors. In this he was followed by Bohm-Bawerk, Wieser and J. B. Clark.

This doctrine, when the time factor is adequately incorporated, becomes a doctrine of the changing functional relations between limiting and complementary factors. The terms, in human economy, indicate the relative importance assigned to different factors, according to their increase or decrease in abundance relative to the other factors, each one of which, in at least a minimum quantity, is essential to the operation of the whole as a unit. Limiting and complementary factors are, in short, a statement of the way

in which the parts are related to the whole through some principle of unity of action, by which the parts are proportioned to each other in such a way as to get the maximum result of their functional interaction.

That meaning of scarcity-value, therefore, which is concrete in the actual values and valuations of individuals, is the relative importance, for the present action of self, ascribed to what is believed will turn out to be the limiting factor whose control at the present time and place is expected to obtain or retain control, not only of the desired complementary factors, but also of the whole operating mechanism. The factors themselves are continually changing their relations to each other. What is now a limiting factor becomes complementary when once it has been obtained, and then another factor becomes the limiting one in order to retain or expand that which previously had been the limiting factor, but is now complementary. The sagacious man is he who attends to the limiting factor at the time and place, knowing that the others will follow, but the flibberty-gibbet is busy about complementary factors and loses even them to the other person who is lucky or sagacious enough to control the limiting factor.

It will here be seen that, by the relativity doctrine of limiting and complementary factors, we approach a principle on which the various meanings of rights and values can be combined into going mechanisms and going concerns. It is through the way in which the principle of willingness shows itself in action. This principle, however, is strictly a

principle of living organisms and their cooperation in going concerns. It does not apply to mechanisms. In other words it is a principle of scarcity. In mechanisms there are only centripetal and centrifugal forces with no purpose and therefore no limiting factor on whose control the attainment of the purpose depends. A natural mechanism, such as an atom or a universe, knows no scarcity, no wants, no overpopulation, no limited resources, no economizing, no purpose, no futurity. It has therefore no limiting and complementary factors among which it chooses to perform, avoid or forbear. It is mere energy as explained by Newton's laws of motion, or Einstein's relativity of time and space, or the laws of thermo-dynamics.

But when the mind of man constructs and operates a mechanism it is no longer mechanism, it is Machine. A machine is the human will handed on from generations by the institutions of language, number, custom, weights, measures and so on. Here the factors - not of Whitehead's natural mechanism, but of man's artificial machine - become limiting and complementary, because scarcity, futurity, purpose, economy, efficiency, have been put into them by the will of man. The limiting factor now is the one, such as a lever, or throttle, or wire, or gasoline, upon which, at the moment, the operation of the whole depends, made up, as it is, of all the limiting and complementary factors. If the operator physically controls this limiting factor at the right time, right place and right amount, and if he controls one machine which is a limiting factor for other machines, then he has more than mechanism, he has a machine as a whole, or a going plant

as a whole. In the agricultural plant, for example, at one time it may be that potash is the limiting factor, then nitrogen, then human labor, managerial ability, and so on. Each of these is "input" and their best correlation yields the "optimum", which is the maximum output relative to total input, and is measurable as "efficiency".

In the biological mechanism, from amoeba to man, that which corresponds to event in mechanisms and to transactions in going concerns is metabolisms, the repetition and correlation of which is organism. Here is the entirely new science of Life and Death and it is to the great credit of Darwin that he started the science of organisms without borrowing any analogies from Newton's science of mechanisms. There has, as yet, been discovered no scientific principle that can account for the origin of organism out of mechanism. Darwin's problem was the Origin of Species, not the Origin of Life. His was a new concept, discontinuous from that of mechanism - the concept of Living Organisms. And, if we examine the five constituent details of Darwin's concept of organism we see that they are variable motions conditioned upon that relation of an organism to limited natural resources which we name the principle of scarcity. They are Heredity, Overpopulation, Variation, Struggle for Life and Survival of the Fittest to make use of limited natural resources. This differs entirely from the concept mechanism, whose underlying principle, Energy, may be expressed as a generalization of the three components, Pressure, Volume and Time. Where Newton and his successors worked out the principle of Energy

as the activity of mechanism, Darwin worked out the principle of scarcity as the activity of organism.

So powerful was this achievement of Darwin that when economists and sociologists came to the problem of society and civilization, Darwin's concept of organism became, by analogy again, the foundation of their concepts of society. Society was a "social organism", and the energy that kept it going was the feelings, instincts, emotions, physiology, and the glands. But here, as brought out most clearly by Judd¹ in criticising and summarizing the work of predecessors in the various social sciences, another concept, Institutionalism, also discontinuous from Darwin's evolution of Life, makes its appearance with its own principle, distinct from either Newton's Energy or Darwin's Scarcity - the principle which we name Willingness. For, on examination of the constituents which go to make up the concept of Institutionalism, we find that their dominant character is the expectations of the future, distinguishable, for economic purposes, as Futurity, Custom, Sovereignty, Scarcity and Efficiency. These are entirely different yet founded upon, the Pressure, Volume and Time which make up Newton's mechanism with its principle of Energy. And they are different from, but founded upon the heredity variability, overpopulation, struggle and survival which make up Darwin's principle of Scarcity.

Hence it is more than poetic metaphor that has led economic theory through the stages of mechanism and organism

¹ Judd, C. H. The Psychology of Institutions (1926).

to the stage of institutionalism and going concerns. These metaphorical theories have been even a correct use of analogy in the scientific sense of similarity arising out of similar functional relations. But the analogies were too narrow. Modern economics is separating, in a practical way, these principles of energy, scarcity and willingness, and its major problem is to bring them together as in as parts of a functioning whole.

Thus a going concern is a mechanism from the standpoint of producing use-values by overcoming the resistance of nature, and the ratio of input of human energy to the output of use-value is calculated in the same way as the ratio of input of water-power to the output of electric energy. This is the efficiency dimension of a going concern, and the one which engineering economists assume to be the whole.

But a going concern is also similar to an organism in that the principle of scarcity runs through all of its activities. This principle takes the form of conflict, competition, survival, but also, as Hume pointed out, it takes the form of ethics, property and justice.

This is because the peculiar way in which the going concern takes up the principles of efficiency and scarcity is through the principle of Futurity which is none other than the principle of Willingness. The separation in fact of these separate fields is impossible. Yet they must be separated in thought by their own terminology, as Darwin did for organisms and Newton for mechanisms; and they are separated in fact by division of labor, before they can be

brought together, in thought and fact, in the functional processes of going concerns. All organisms and institutions are mechanisms, but with something added. All institutions are composed of organisms, with something added. But it is this something added that becomes the general principle requiring to be worked out within its own field and own terminology, such that the principles of mechanism and organism to which it is added become themselves subordinate and greatly changed, yet necessary in their revised form.

This separation in thought and fact and then reunion in the concept of a whole applies, in detail, to the transactions whose expected repetition is the going concern. Managerial transactions pertain to the mechanism and efficiency of the concern; bargaining transactions to the principle of scarcity throughout the concern; judicial, legislative and executive procedure to the unity and continuity of the concern through subordination of members to the whole. And these transactions, since the principle of scarcity runs through them, have real analogies to the factors which Darwin discovered in organisms. Custom, the repetition of transactions, is analogous to heredity; the duplication and multiplication of transactions arise from pressure of population; their variability is evident, and out of the variabilities come changes in customs and survival. But here the survival is "artificial selection" imposed upon "natural selection", and it is this artificiality, which is merely the human will in action, that converts mechanisms into machines, organisms into human minds, and unorganized institutions into going concerns.

For man's mind is more than a living organism. As organism it is only a highly developed brain. This brain is a mere part of an animal organism until it has become "institutionalized".¹ Thereupon it acquires a widened scope of activity which we call mind and will. Its first institution is signs, words, numbers, speech, writing, which we call language. This is a habit for the individual and a custom handed down from generations of individuals - in short, an institution. His other institutions are fire, tools, machinery,² family, government, and so on, whose enduring repetition upon the artificial principle of proportioning the limiting and complementary factors, we name going concerns. Hence man is more than organism - he is institutionism, and it is only the institutionalized mind that evolves that remarkable time dimension of economic activity to which we give the name, Futurity. This institutional extension of the organism's brain into remote future time is inseparable from its extension into remote space. And it is these two institutionalized extensions of brain activity that make possible the highly developed modern going concerns in industry and government that give orders around the world and to unborn generations.

As to Time, the energy of mechanisms operates without any reference whatever to its passage, and the Time factor

1 See the illuminating discussion of the "institutionalized mind" in E. Jordan's *Forms of Individuality* (1927).

Reviewed by Commons, *Amer. Law Jour.*, Dec. 1928.

2 See Sumner, F. S., exhaustive study of institutions in *Soc.*?

which is introduced in its measurement is solely an external operation of the human mind, not internal for the mechanism itself.

But scarcity is essentially a matter of the passage of time for the organism itself, since, even in the lowest organisms, there is always an interval between the effort to obtain a share of the limited food supply and the satisfaction of wants derived from that share. This is the germ of Futurity. In animal life this interval of time is so short that the response to the stimuli of want and expected satisfaction is properly described as instinctive. Instinctive effort is induced by heredity and scarcity but the interval of time between effort and satisfaction is so short that the response, by analogy to mechanics, is said to be automatic or direct. But a strictly automatic or direct response, without an interval of time, is true only of mechanisms, for they experience no wants or efforts and no interval between effort and satisfaction. Their energy flows on regardless of the necessity of distinguishing between external objects that satisfy wants and those that do not, or must be avoided. Here, in the organism, is the germ of choice of alternatives, whereas mechanisms do not choose. Moreover, this interval of time is, of course, an interval between present and future - present action which is the response and future satisfaction from which proceeds the stimulus. But the interval is short enough so that it can be bridged by heredity and instinct without the aid of reason and social institutions. Thus it is that in the principle of scarcity, which came into the

world with living organisms, is found the germs of all that afterwards we characterize as the principle of Willingness. And it may be that here the science of institutions can be made continuous with the science of organisms, which has not yet been understood in the case of the metabolism that converts dead matter into living flesh. Yet in the futurity-dimensions of present activity, afforded by the expectations of institutions, the human organism converts future happenings into present action. How this happens physiologically we do not know. What we say of Time holds of Space. It is only institutionalized brains that compass the world, and they do it through the going concerns that serve as instruments.

In these two extensions into future time and distant space, with almost immortality and ubiquity, the going concern is more than mechanism and more than organism - it is just what the language of everyday man says it is and the courts have taken over - a very precious going concern that embodies his expectations of beneficial transactions and calls on him for loyalty, patriotism, and personification.

We have previously indicated the feasible position which so-called "behavioristic psychology" should occupy in economic theory, when once behavior is analyzed as performance, avoidance, forbearance. It is dimensions of the will-in-action that unite law and economics. The word "behaviorism" has been appropriated by those who treat the individual in purely individualistic fashion as a physiological and anatomical mechanism.¹ But, in economics, the individual is a participant

1 Watson, Behaviorism.

in transactions and a member of going concerns. Here it is not so much his physiology, his "glands" and "brain patterns" that interest us - it is whether he performs, forbears or avoids. From this point of view the behaviorists are not really behaviorists. They do not analyse the dimensions of behavior as would be done in the physical sciences which they assume to imitate. Instead, they venture to connect up unanalyzed behavior with stimuli on the outside and physiology on the inside. Rather should they, at least in economics, connect inducements and sanctions, persuasions, coercions and commands on the social side with performance, forbearance and avoidance on the individual side. They pass directly from outside to inside because they want to get away from the "will", or "soul". But, instead of getting away from it let them analyze what it means in behavioristic fashion, as did other sciences when they got away from astrology to astronomy, or from alchemy to chemistry. So also with the will or the principle of willingness. The will means individual and collective activity of three physical and economic dimensions - performance, avoidance, forbearance - a kind of activity unknown to any physical science, but capable of being analyzed and measured like electricity or gravity.

Physical sciences got away from metaphorical entities such as "force", or "energy", not by rejecting the idea, but by changing it from unanalyzed souls, spirits and entities into variable dimensions of motion. So with the will. We got away from it, not by rejecting it but by analyzing and measuring its motions. In getting away from the will because it is "metaphysical" the "behaviorists" jump over from the

external behavior of the will to the internal behavior of physiology and anatomy, thinking there is no metaphysical gap between the will as one kind of behavior and physiology as a similar kind of behavior. But there is an impassable gap. They are not continuous. Only by metaphysics - or rather by metaphor - is the gap filled. The lesson of other sciences would say that this metaphorical jump should not be made. Treat the will as an external whole in its own behavioristic dimensions, and let physiologists and anatomists treat the insides of the organisms as another whole. Let us, for our present purposes, forget physiology and anatomy, or rather forget how it is that one kind of subjectivity, the mind, gets into or out of another kind of subjectivity, the physiological body, and analyze what the resultant whole, which is none other than the will, actually does.

It performs, avoids, forbears, as a whole organism, and it does so in association with other wills, through transactions and going concerns. Acting as a whole organism, through performance, forbearance, avoidance, it is thus the behavioristic nexus that connects, on the one side, that which we name the transactions and working rules of going concerns, expressed as opportunity, competition, power, and as rights, duties, liberties and exposures, with the changing functional relation, on the other side, of uses, scarcities and expectancies, which we name economic value.

In this analysis of human behavior, the concept of time differs entirely from that of motion in all other sciences. We have traced all of Macleod's fallacies to one fundamental defect - his concept of Time. Paradoxical enough, while he

had the concept of Time he did not have the concept of Motion. We picture motion, by physical analogy, as a flow of Time. A flow of time, mathematically, is a zero point of time, the present, moving forward without dimensions and therefore non-existent, between the incoming Future and the outgoing Past. This concept Macleod did not have, though, in one connection, he represented the Present by zero. But psychologically the Present is an instant of time, as Peirce portrayed it, shading off less vividly in two directions, towards the Past and towards the Future. The Past is Memory, the Present is Sensation, the Future is Expectation, and they all exist together in the mind, like the notes of a tune, at that point of Time which is not zero but is sensation. In this way Peirce converted Hume's skepticism into Pragmatism, and mathematics into volition.

It is this pragmatic concept of time that enables us to make distinctions between different dimensions of future time conforming to customary usage. The present is the Instant Future, or Immediate Future, measurable objectively in seconds, minutes and perhaps an hour or two, but so short an interval that it practically involves no sensation of waiting. The short-time future ranges from the "over-night" rate on the stock market to the 30, 40, or 90 days' period of the usual commercial loans, where the waiting is appreciable and therefore is measured. The long-time future is any duration in excess of short-time future. These distinctions are not so much arbitrary as they are customary, and are therefore all the more useful in a practical analysis of behavior. Macleod assumed that Time somehow is objective, embodied as one of

the dimensions of his saleable commodity, a debt, and that it - therefore came in chunks or lumps according to the period of the debt, like use-value or scarcity-value. But Time is wholly subjective. It comes in the customary expectations which dominate present behavior according to the habits of different classes of people, and the same classes in different transactions. The most accurate measurements of future time are made on the debt markets for short-time and long-time futurities, but in the processes of consumption, of play, exercise, work, and other familiar situations it is the expectation of the instant future, so brief as not to be worth while measuring, that dominate activity.

Thus the "flow of time", objectively, is the Motion of the Instant, while subjectively it is the stream of memory, sensation, expectation of the Instant, as well as the physiological metabolism of the living body. Since we can know these subjective motions only by the motions of the living creature which experiences them, the flow of time is the behavior of the individual in its dimensions of performance, avoidance, forbearance. Hence we have one kind of motion, individual performance, avoidance, forbearance, lying between and connecting up two kinds of motion, the external motions of the universe, including other human beings, and the internal physiological motions which somehow accompany memory, sensation and expectation. It is this flow of human behavior between the flow of external and internal motion, accompanied mysteriously somehow by Memory, Sensation and Expectation, that, in economics, we name Transactions and Going Concerns,

and the principle of Willingness. It is the human flow of Time directed towards the future, and an economic theory based upon it is neither a materialistic theory of commodities, nor a subjective theory of sensations or physiology, but is a volitional theory of economic activity directed towards purposes in the future.

As to the classical and hedonic economists similar observations are called for. The analysis of the will in action as performance, avoidance, forbearance, in view of the future, is superficial enough, but it is always the things nearest that are last investigated. The analysis gets away from the abstract simplification which picks out only one quality of the will - that which is tied metaphorically to commodities by pain, pleasure or diminishing utility, and which builds upon that metaphor a physical system of economics. The individual will is a whole, in its own personality, operating through transaction and within concerns, which, in turn, are other wholes - this time of concerted action. Thus the behavioristic analysis of the will makes possible an economic theory which avoids that dualism of ethics, or law, and economics which started with Adam Smith, because it combines in one concept, Willingness, the ethical and legal relations of rights, duties, liberties and exposures of performance, avoidance and forbearance with the economic analysis of Value and Valuation as expected use-value and scarcity-value.

These preliminaries make it possible to apply to transactions and going concerns the principle of limiting and complementary factors as both legal and economic factors. The two principles of scarcity and futurity explain the

application. For the individual who would obtain advantages for self, the limiting factors are the particular behavior of self or others at the time and place upon which depends the complementary behavior of others. In a suit at law the limiting factor may be, at one time, the judge, at another the jury, at another the sheriff. In a manufacturing concern the limiting factor may be the mechanic, the foreman, the superintendent, even the scrubwoman, upon whose control by means of the managerial transactions of command and obedience the totality of transactions depends, and the result is a "going plant" as a whole with its measurable result - efficiency. It is out of these social relations of control over individual behavior, backed by the sanctions of collective control, that a right to command obedience may become the limiting factor, and the corresponding "right of action" may become the limiting factor.

The foregoing "efficiency" relations are inseparable from "scarcity" relations, since here the question is as to the abundance or scarcity of the limiting and complementary factor when needed, and consequently the prices or taxes that must be paid to obtain them. The two are separable in analysis but not in reality, since they operate functionally upon each other in making up the going concern. The quantity of gasoline needed to operate a car, or number of mechanics or foremen needed to operate a plant, or number of judges to operate a bench, is separable in thought but not in fact from the price or wage or salary.

Thus the universality of the principle of limiting and

complementary factors appears in all sciences insofar as the human will endeavors to operate the subject-matter for a purpose. Those factors are deemed important which are limited in amount relative to others. All of them must be present, but only the limiting ones are sought. The complementary ones are in the future so far as action is concerned. If they are secure so as to be available when needed then no attention is paid to them. Thus a person's "rights" exist now, and he "has rights", but in billions of transactions they are complementary and not limiting factors. If they are secure, then only in one case out of billions do they become the limiting factor. If insecure then everything else is dropped and armies go out to control the limiting factor.

This doctrine of limiting and complementary factors determined by Scarcity and Futurity, seems to be all that there is in the metaphysical problems of "essences" and "existences". Essences are secure expectations, but existences are the insecurities upon whose control the security of the others depends. Plato's "essence", for example, was an external existing something that awaited a time when it should come down and be embodied in actual behavior. It was merely an expectation of complementary factors. More attenuated than this crude physical analogy is the Kantian Pure Reason, Santayana's Pure Essence and the neo-Kantian distinction of Essences and Existences. Macleod's and the lawyer's abstract right seems to be a similar pre-existing something. It is a Platonic or neo-Kantian essence. But if we examine the meanings which these abstractions have in the actual process of

transactions we find that an essence or abstraction is simply an expected uniformity of repetition when needed. It is not an idea or external nothing previously existing that comes down and gets embodied. It is futurity embodying itself in present values and valuations. It is a very real expectation not attended to because it is secure, much as air is a real expectation not attended to unless it gets too hot or too cold.

Thus Kelsen rightly holds that the "essence" of legal relations is found in the two items of an "operative fact" and "enforcement" by an official, and he denies that the terms right, duty, power, liability, etc., are "legal" terms in the sense of pure law. They indicate social or ethical relations, not legal relations. ¹ Much illumination and accuracy are contributed by Kelsen in this analysis, but we reach the similar result by way of the pragmatic doctrine of Futurity and the economic doctrine of Limiting and Complementary Factors. Macleod's abstract right now existing becomes an expectation of Kelsen's legal compulsion indicated by a "right of action" in case such is necessary in order to obtain the commodity, service or money claimed from another person. Assuming that an established system of law may be expected to continue, the "essence" of legal relations is merely the expectation of uniformity of repetition by officials in the compulsory transactions of compelling obedience on the part of citizens. If so expected, it is not, in the

1 Kelsen, Hans, Allgemeine Staatslehre (1923) Review by Erich Voegelin in Pol. Sci. Quar., June, 1927.

many billions of transactions, the limiting factor to which value is now imputed. The limiting factor is the immediate behavior of the private parties, - their promises, the kind, quality, amount of economic goods, etc., as the case may be. The expected uniformity of official behavior is highly decisive in any estimate of present value, but it is not the limiting factor at the time of action, if its expectation is secure. The decisions of courts effect great changes in values and great transfers of value from individuals and classes to other individuals and classes. It is the expectations thus created that are designated rights, duties, liberties, exposures, and these are, indeed, the social and economic expectations based upon the expected political power of citizens, collectively or individually, in controlling the behavior of legislators, courts and executives. This is not Platonism or neo-Kantism - it is Analytic Pragmatism.

The reconciliation is in the pragmatic doctrine of Futurity. Rights and Values now exist, at the instant of action, but they exist as futurities. Legal power does not now exist in action, if it is not exercised, but it does exist in the "status" of security, of expectations, which is just as good. It is the future behavior of which rights is the name of the present expectation. Legal power is the future itself, Right is its futurity. Value is the futurity of the limited supply of goods to be obtained by means of rights.

These are not abstractions - they are expectations - the expectations of collective action. These rights, values and powers exist, all of them, at the present time, but they

exist only as the present status of expectations, ready to be "embodied" when needed in transactions, at which time they will be limiting factors in their present. These mental expectations are Locke's "ideas" and Plato's and Kant's "essences", regardless of time, and therefore "eternal", "timeless". But concretely, pragmatically and timeful, they exist as limiting or complementary factors at the moment of action. Even then they exist only as futurities - yet futurities are the only "objects" on which mankind acts. They are Peirce's "realities", their "essence" is Future Time, their present "existence" is Expectation, and their present reality is transactions and going concerns.

4. Human Value

On the basis of the foregoing we may venture upon a corresponding analysis of the feelings which mysteriously accompany all transactions and may be named subjective ethics. Considering this aspect of ethics in the most general form it is the more or less intense feelings of expectation accompanying all transactions, to which the foregoing name "status" is applicable. Analysing this status of expectations into its parts it is my feelings of rights, duties, liberties and exposures with reference to Economic Value in its variable dimensions of use, scarcity and futurity, and within the several concerns of which I am a member or participant. While, in general, it is the feeling of happiness or misery, satisfaction or dissatisfaction, in various and changing degrees arising from

all the expectations which constitute my status, it is, in particular, the feelings of rights, duties, liberties and exposures which are the objective relations in which I stand towards other individuals or collections of individuals in the acquisition and distribution of wealth. I do not stop, in practical life, to analyse it scientifically, but I do know, at times, that these ethical feelings are more intense than the feelings of hunger or consumption of wealth, at that time. They are feelings of hope, fear, despair, in view of the expected actions of others, in short, the general feeling of Status arising from all component feelings of rights, duties, liberties and exposures, relative to my economic position, which at their extremes make up the status of happiness or misery.

These component feelings we can analyze according to the formulae presented above. We must first, however, distinguish between an existing status and an alternative status, and between necessity and choice. It is these distinctions that make possible an understandable meaning of the term, "ought", or "ought not".

The existing status is plain - I am now in such a position relative to the economic or political concern of which I am a member or participant that I expect its working rules will benefit me, or burden me, or leave me unprotected, in those various ways which are analyzed as rights, duties, liberties and exposures. But I conceive that the concern, or rather the dominating persons in the economic or political concern, might change their minds and thus change my status in one or all of the several particulars. I conceive also

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The foregoing discussion is intended to distinguish going concerns from mechanisms and organisms, on the basis of the contrasted relations between the parts and the whole, a relation quite different from that of Macleod and the classical and hedonic economists who abstracted a single part, or principle, from the whole and then built upon it a logical system of thought. We must look to the German jurist-economist, Max Weber, for the first positive application to political economy of the general philosophical theory of the part-whole relation, a theory which, in Germany, has been designated the Gestalt theory, and in English, by General Smuts, as Holism.¹ The problem which confronted Weber was the dispute in Germany between the Deductive and Historical schools, represented mainly by Menger and Schmoller.² Menger had set forth the extreme individualistic pre-supposition, and he sought, on the analogy of physical science, to abstract from all other phenomena the simplest "typical" trait and

1 Weber, Max, "Die Objektivität der sozialwissenschaftlicher und sozialpolitischer Erkenntnis," 19 Archiv für Sozialw. 22 (1904); "R. Stammler's Ueberwindung der materialistischen Geschichtsauffassung," 24 Archiv f. Sozw. 94 (1907); Dichtl, Carl, "The Life and Work of Max Weber" and citations there given, 38 Quar. Jour. Econ. 87 (1924). A comprehensive survey of Weber's methodology is by Alex. v. Schelting, "Die logische Theorie der Kulturwissenschaft von Max Weber," 49 Archiv f. Sozialw. 623 (1922). The Weber method is used by Sombart, Werner, Der Moderne Kapitalismus, 6 vol. enlarged and revised (1928); and by Tawney, R. H., Religion and the Rise of Capitalism (1923). On the Gestalt theory see the psychological and philosophical journals. Smuts, John, Holism in its Relation to Evolution (1927). For Schmoller's criticism of Weber see 8 Handw. G. Staatsw. 3rd ed. 468. Weber's analysis is based on Richert, H., Die Grenzen der Naturwissenschaftlichen Begriffsbildung (1902).

2 Menger, C., Die Methode der Sozialwissenschaften (1883); Die Irrthümer des Historismus (1884); Schmoller, G., "Zur Methodologie der Staats- und Sozialwissenschaften," 7 Jahrb. f. Gesetzg. 975 (1883); See also Commons, J. R., "Das Anglo-Amerikanische Recht und die Wirtschaftstheorie," 3 Die Wirtschaftstheorie der Gegenwart 293 (1928).

"typical" relation upon which an "exact" science of economics should be constructed. His typical traits were self-interest and utility, and his typical relation was that between the quantity of useful goods needed by an individual (Bedarf) and the quantity of such goods within the individual's control at the time and place (die verfügbare Güterquantitäten). This typical relation gave to him the meaning of "economic" goods, distinguished from "non-economic" goods, which, we have just now noted, is the biological principle of Scarcity - a relation between an organism and its environment. On this principle, of which a special case is the human organism, Menger would build the "exact" science of Economics. In reality, it was the science of Scarcity which Darwin had builded for all organisms, and which, at Darwin's hands, we name Biological Scarcity, but which Menger, in transferring it to the human organism, converted to what we have distinguished as Psychological Scarcity. Menger did not build upon that other aspect of scarcity, a social scarcity which Hume rightly named Property, and which gives rise to Property-rights.

Schmoller contended that this abstraction of self-interest gave to us only "a shadowy phantom," an "imaginary Robinson Crusoe," abstracted from the complex historical, social, legal and economic trait and relations required to reveal the whole truth of political economy. In fact, Schmoller might have gone further in his criticism of Menger's method. In order to get his "exact" science of individual psychology, Menger not only eliminated all such motives as ethical feelings of right, wrong, justice, duty, and not only eliminated all conformity to custom, all subordination to, or exercise of, coercion, but he also eliminated ignorance, and assumed infallibility and infinite knowledge, corrected, however, in practice, by an allowance for "error".

Yet Menger and Schmoller agreed not only that abstraction was necessary, but also that a great many abstractions were necessary in order to ascertain the whole truth. The jurist makes an abstraction of property rights, the biologist or economist of scarcity relations, the psychologist of feelings, intellect or will, the chemist of atoms, etc. I see my table in my room. The physicist abstracts the weight from the other qualities of the table; the chemist abstracts the chemical constituents; the biologist the organic structure; the jurist my property rights; the moralist the rights, wrongs and duties that ought to be observed respecting that table; the economist the use-value, scarcity-value and expectations of those who are related to that table; the psychologist the percepts, concepts, feelings, habits, volitions, of those interested in the table. For each of these abstractions the attributes which he abstracts are supposed to be reality. He can take these realities thus abstracted and then work each of them out separately into an exact, or nearly exact, science. The problem is, How can all of these abstract realities, after each has been worked into its own science, be brought together in a single science of my table as it stands there in my room?

Menger and Schmoller agreed, of course, in abstracting something different from what the biologist, chemist, or physicist abstracts. They agreed in abstracting property rights, psychology, ethics, habits, scarcity, usefulness, and so on, all of which, sooner or later, become each a separable abstract problem for economists. But even so, having separated themselves from the biologists and physicists, how shall they comprehend the whole of these quite diverse sciences of law, economics, psychology, sociology, ethics, etc., into a whole which shall contain the true reality for economic science?

On examination we find that each of them started with a psychological, and therefore subjective, abstraction to which he attached

importance. Menger started with selfish desires for external physical objects and selfish satisfactions to be derived from those objects. Schmoller started with the ethical feelings of what ought to be the desires and satisfactions in view of the desires and satisfactions of others. Then Menger worked out his psychology into an exact science of diminishing and marginal utility, but Schmoller could only work his out into the historical evolution of customs, laws, and institutions. The effort, therefore, to combine the two in a comprehensive unity of a single reality that should be both theoretical in Menger's deductive sense, and empirical in Schmoller's historical sense, seemed hopeless, and the dualism went on between the deductive and historical method, between economics and ethics, between theory and practice, between science and art.

Here Weber intervened with his "ideal-typus." He reversed the statement of the problem. It is not, How to combine different sciences after they have been worked out separately by abstraction; but How to state the problem of combining them before they have been worked out separately. This prior statement is the ideal-typus. How does it differ from Menger's "typical" traits and relations?

First, it is not a reality, or rather is not a copy of reality. The reality, according to Menger, was a certain thing or action that could be apprehended in idea as actually existing - say, the commodity, the individual dealing with the commodity to satisfy his wants, the quantity of commodities available, the quantity wanted - in short, Menger's typical trait and relation was as much a reality as a man riding a horse. And the "laws" worked out by Menger from these typical traits and relations into the marginal utility theory were also as much a reality as the attraction of gravitation. Not so,

replies Weber. That may be done by Newton or Einstein because they have been able to isolate a single principle which always acts uniformly. But the matter of self-interest is more complex. What Menger has done is to work out an "Ideal-type", not an idea of reality. His ideal-type is not ~~what actually~~ works out, but what would work out if it were possible to isolate Menger's individualistic man from everything else. That is impossible, hence Menger's idea is, in fact, an ideal-type, not a copy of reality.

This we consider the heart of Weber's contribution. It converts the whole process of economic theorizing from a "theory," in the older sense of the logical consistency of reality, to the mere methodology of constructing intellectual tools to be used in investigation. There is no longer a question of antagonism between theory and practice, for a theory is only a tool for investigating practice, like a spade for digging up facts and converting them into an understandable system of agriculture. Indeed, a science is not a body of knowledge - it is just a method of investigation, and a theory is its method.

Second, this formulation of an ideal-typus is what every science does, and Menger is not to be criticised on that account. The criticism is that, in the social sciences, the parts cannot be isolated, and the ideal-type should therefore include all of the traits and relations which afterwards are to be combined, and, since all of these can be ascertained only from history, the ideal-type must be a historical concept.

Third. But not all of history is relevant to economic theorizing. Hence the economist must abstract from the empirical data of history only so much as is needed, but not less than is needed, to construct an all-round ideal-type for the particular phase of history which, as economist, he is concerned with.

Fourth. Even so, this ideal-type abstracted from history will not correspond to the actual - it will still be a "Utopic," a mental construction of what that historical institution would be if only the factors relevant to economics are abstracted as a whole in all of their idealized relations. Thus he constructed a purely idealized concept of a medieval borough, or of a capitalistic corporation, or of a trade union, etc., to be used, not as a "theory" of what actually existed, but as a mental tool for trying to understand it.

Fifth. This ideal-typus is not an ethical ideal (end-punkt) of what ought to be, but is only an investigational. or instrumental (heuristic) idea, which the scientist may then use for research, selection of facts, and comparison with what he actually finds.

Sixth. Hence the ideal-typus is not an "average," like a mathematical line running through the dispersion of empirical facts - it is strictly an "ideal" of what the facts would be if irrelevant facts were eliminated. Neither is it an hypothesis. It is a synthesis, which helps to formulate an hypothesis, for it sets up the following problem: What is the meaning of the activities in their relations to each other, and thus suggests the kind of hypothesis needed to select the facts and weigh their relative importance. It is a synthesis of all the factors out of which we formulate an hypothesis. It differs from the theory of Menger as synthesis differs from analysis.

Seventh. This search for the meaning of human activities, formulated as an ideal-typus, can never be expected to yield an "exact" science, or even an approximation to the quantitative requirements of other sciences. Yet that is not all that is wanted, anyhow. What the economist wants is understanding, and he wants measurement only as an aid to understanding. The subject-matter with which an economist deals is not a mechanism or organism whose motions the investi-

enter cannot understand - it is human beings whose activities he can fairly well understand by putting himself "in their place" and thus constructing the "reasons," in the sense of subjective motives or purposes, of their activity under all the variable conditions of time and place.

Eighth. The number of factors to be taken into account in the ideal-typus for social sciences is not predetermined - they include everything which the economist may find, upon investigation, to be relevant. Hence the economist cannot construct his ideal-type without prolonged previous investigation. The whole range of civilization (Kultur) is open to him, but the various civilizations, on investigation, may arrange themselves in such a way that one may be compared with another by comparing the different ideal-types, and, also, subordinate types similarly may be arranged and compared. Thus he can arrive at the "ideal" of capitalism, individualism, feudalism, mercantilism, which are special cases of the ideal-typus, and can develop hypotheses, to be tested by investigation, of the historical development from one type to another, or of the interrelations of factors within any particular organization to be investigated.

While Weber has performed a significant service in thus constructing the ideal-typus - yet we are convinced, by the way in which he and his followers make use of it, that it is a tool which must be cautiously analyzed before the germ of validity in it can be used in the scientific investigation of economic events. Its usefulness consists in clarifying the thinking on social sciences and leading us to inquire whether there may be an alternative method, or a special application of Weber's method, which, while being truly scientific in the sense also employed in the physical and organic sciences, yet distinguishes a science of human behavior from the non-human sciences

by the same attribute of subjective value which Weber brings out, but which he thinks cannot be reduced to a science because value is essentially subjective, emotional, individualistic and immeasurable.

We approach this problem by distinguishing four different meanings of the ideal-typus which emerge from the use made of it especially by Weber, Schenck, and Tawney. These we may distinguish as the ideal-type for the four purposes of Pedagogy, Personification, Science, and Ethics. We shall designate these the pedagogical, the personified, the scientific, and the ethical ideal-types.

1. The Pedagogic Ideal Type. - As a pedagogical instrument, the ideal-typus is an intellectual construction by means of which the innermost soul or spirit of an historical situation or institution, or individual, may be so rationalized as to be understood in terms of the human motives that animate it. The need of such an instrument in economics and other social sciences arises from the fact of Valuation. Valuing is a strictly emotional process, differing for each individual and for the same individual at different times. It is not merely economic valuation, it is religious, sexual, patriotic - in fact the whole of the emotions aroused by a whole civilization which the Germans name Kultur, but which does not have its English equivalent, since we think of civilization as a structure, not something to be loved. Since valuation is thus an internal process of emotions, it cannot be reduced to the uniformity of repetition for all individuals required by a science. Yet it is this very emotional process that must be appealed to if we are really to understand the reasons why people act as they do. This appeal can be made only by creating a mental picture revealing, not only how people act, but why they act as they do under the particular circumstances selected.

We do not say that this emotional process cannot be reduced to a science, with its uniformities, but, if so, it is the science of Psychology, with its art of Pedagogy, and not economics, either historical or deductive. Economics builds upon it, just as it builds upon jurisprudence, physics, chemistry. And when Weber builds his ideal-typus upon it he is indeed building on real foundations, but he is building a science and art of pedagogy, not economics.

Yet his contribution is all the more important because it enables us to designate certain so-called economic theories, not as economics, but as pedagogy. Thus it is that Weber, by this meaning of ideal-typus, gives a correct interpretation of Menger's emotions of self-interest operating under the circumstances of increasing supply. Menger's "diminishing utility," with its "exact" science of marginal utility, is not and never was either exact or a reality and could never become a reality or exact. But it does give us an understanding of why people act with less eagerness in obtaining commodities which are abundant than they do when the same commodities are scarce, because it appeals to our experience of our own changing feelings under similar circumstances. Thus Menger's formula is not economic science, as Menger thought it was - it is, we should say, merely pedagogy, for it is an ideal-type constructed to illustrate a certain aspect of human behavior. As such it is useful for pedagogic illustration, but cannot be used in a science which must take all factors into account, since it never operates by itself. Therefore Weber would not reject Menger's analysis in toto, as the historical school did when Schmoller called it a caricature - he would retain it even though it is a phantasie, an Utopia, simply because it helps us to understand one aspect of human behavior which must, however, be combined with other factors before the scientific reality of the whole of human behavior

can be understood. It is a useful Utopia for pedagogical purposes.

But the historical school of economics also has its utopias - its ideal types. Herein, we should say, Weber convicted them also of pedagogy, instead of economics. The historical school constructs a picture of the Renaissance with Leonardo da Vinci as typical of that new spirit that came into Europe after the fall of Constantinople; or a picture of early Christianity with the Apostle Paul as its individual type. Here it is that the pure love of God and Man, without selfishness, working itself into the behavior of the converts, is the ideal-type. These are just as unreal, for the whole civilization of the Roman Empire at that time, as Menger's "economic man." But, unless we create these mental pictures, abstracted from all the other phenomena of the Middle Ages or the Roman Empire we could not understand the spirit of the Renaissance or of early Christianity.

This pedagogical class of ideal types are all of them mere utopias, mere phantasies, but they are exactly what we employ when we try to understand, or lead others to understand, the kind of behavior which we are examining, and, in fact, trying to place ourselves in their place and obtain that "historical sense" which the economic theorist must have if he would interpret the economic behavior of others, not only in the past but also under circumstances other than his own in the present. We cannot possibly put ourselves in the place of a mechanism or organism so as to understand its own "why" it acted so and so, because it has no emotions like our own. We do not know that electricity had any reason for hitting John Smith instead of Lily Lou. In fact we do know that it had no reasons, because it had no emotions in the matter. We do not know that a hen can explain to herself why she sits four weeks on ducks' eggs. In fact we know that she had no sense of values that we can understand. But we can

understand what Benjamin Franklin was after and why a farmer set the hen. It was his sense of Value, his feelings, emotions, purposes, curiosity, under all the circumstances of time and place. This is peculiar to the social sciences, including economics, and is unknown in the physical sciences, but should be included in the social sciences, else they become only mechanistic.

Yet we hold that it is pedagogics, not economics. For the ideal-typus, with this meaning, is a mental tool which we construct in order to understand why beings, with emotions like our own, acted as they did. In the sciences of mechanisms and organisms we construct mental tools to answer only what and how much they did and what we may expect them to do. In the sciences of human behavior we also do the same, but we go much further - we look for the values, the motives, the emotions, the purposes, in short, the "spirit." In other words, we seek to understand, not merely to classify, measure, and mechanize.

2. Personification as Ideal Type. - But the question still remains. When we seek to understand, in the sense employed by Weber, are we in the field of science? Weber correctly says, No, and constructs the ideal-typus as an utopia with the definite purpose of making clear why he says No. If so, then the ideal-typus is not an instrument of science - it is an instrument of pedagogy. It must now be observed that therefore it is simply the method of Personification, which is the bane of political economy. We personify, indeed, if we would understand in the intimate sense of emotions. In other sciences, this personification was astrology, alchemy, vital force. That is to say, the astrologer, or alchemist, or vitalist, pictured himself with his feelings, will, intellect, reason - in short, with his ideal-typus - in the place of the observed motions, and asked why they so moved, instead of merely asking, as the astronomer, chemist and biologist afterwards did, how and how much they moved.

We have already pointed out the two personifications that preceded the formulation of the scientific principle of scarcity. Ricardo personified scarcity as the resistance of nature to human labor. Thus "labor" became the personification of scarcity, and ended in the queer line of labor-theories, instead of scarcity-theories, through Marx, Proudhon, Bohm-Bawerk, Clark, the propulists and greenbackers. They were trying to get rid of money, the scientific measure of scarcity, which tells us only how and how much, and they rested their case on Weber's utopia of why - a truly ideal-typus, an economic astrology.

The other personification of scarcity was the diminishing utility theories of Gossen, Menger, Walras, and Jevons, rightly characterized by Weber as utopias under the polite name of ideal-typus. Where Bentham had personified economics and ethics by the ideal-typus of a parallelism of pain and pleasure accompanying the cost and income of commodities, these alchemists appealed to well-known feelings of diminishing pleasure and its inverse equivalent, increasing pain. But, after all, it was a personification, put in the form of an utopian ideal-typus of that scarcity-relationship which we are actually measuring by the scarcity dimensions of money.

The above personifications were originated in the deductive or mechanistic economics of the classical, socialistic, anarchistic and hedonic schools, by the elimination of money. A similar personification, from the historical aspect, is Weber's own "capitalist spirit," taken over by Sombart and Tawney. It is, now, a personification - not without money but with money - whereby is made possible the idea of unlimited accumulation of money values, but with also the same ideal-typus of Ricardo and Menger, namely, the acquisition of income for self without any regard whatever to duties or obligations owing to

others. Contrasted with this is Weber's and Sombart's "handicraft-spirit" of the town-economy of the Middle Ages, where the manual workers and tradesmen adopted their gild rules designed to prevent a gildsman from getting rich at the expense of his fellow gildsmen. What happens, in these cases, is the personification of Capitalism and the personification of guilds and trade unions, each given its own peculiar ideal-typus, not because any such "spirit" actually existed apart from all its circumstances, but in order that we, having similar emotions, can put ourselves in the place of the typical capitalist or typical trade-unionist and thereby "understand" him. This is good enough, and much to be desired, but it must be noted that when we "understand" the behavior of others in this sense of fellow-emotions, we are necessarily understanding them in the sense of hating, deprecating, loving, admiring them. Hence our ideal-typus is likely to be constructed on the basis of our own emotions, as when Weber and Sombart overlook the violence and exclusiveness of guilds and unions towards outsiders, by selecting only their qualities of justice towards fellow gildsmen or unionists, or when they overlook the conscientious payment of debts or the goodwill services to customers, or other ethical attitudes, of capitalists.

Consequently, the ideal-typus, since it is both pedagogical and a personification, is the precise mental tool employed for Propaganda, either the attractive propaganda of advertizing or the dettractive propaganda of politics. Even though the economist, like Weber or Sombart, disavows that he is either a "labor" economist or a "capitalist" economist, yet the fact that he selects for his ideal type of the handicraft spirit only that part of the whole spirit which looks towards justice between gild members and omits that part which looks towards self-seeking, and selects for his ideal type of the capitalist

spirit only that part that looks towards unlimited self-seeking and omits the part which looks towards justice, equality and goodwill, must stamp the economist as building upon the foundations of propaganda while disavowing it.

Weber's disavowal of this propagandist bias takes the distinction between the ultimate goal of what ought to be (Endpunkt) and the instrument or means by which any goal is reached. His ideal-typus is not a picture of what ought to be, such as the ideals of communism, anarchism, or individualism, nor is it a picture of what ought to be the ultimate state of mankind, whether the Virtue of the Intuitionists or the Universal Happiness of the Utilitarians, but it is solely an instrumental ideal-type taken from the factors deemed relevant to the working out of the particular process, regardless of what the investigator thinks should be the ultimate goal. He discovers this instrumental purpose objectively from the facts which he investigates. The capitalist spirit, or the handicraft spirit, or the spirit of early Christianity is not what the investigator thinks is right or wrong - it is what he finds, on investigation, to be the way that spirit would work if it were not hindered or aided by the working of any other spirit or circumstance. It is strictly an instrumental ideal type to aid the understanding, and not a propagandist ideal-type to convert or alienate anybody.

But we should note that the bias of investigators does not show itself only in differences of opinion as to the ultimate goal - it shows itself also in the differences in weight, that is, subjective values, assigned to the different factors that go to make up the whole process. One investigator may attach greater weight to labor, wages, hours; another to investment, profit, interest; another to the distant future, another to the immediate future, another to ethics, another to

economics, etc. This difference in weighing is in fact, influenced by differences in the ideal of an ultimate goal, and cannot be separated from it. Hence Weber's "instrumental" ideal-type is also subjective and emotional. The differences in "weight" are differences in meaning and understanding and may be summarized as differences in those very subjective valuations on which Weber builds his ideal-typus. According to his subjective valuations the investigator will not only select the factors which form his ideal type, to the exclusion of other factors, but will also give greater or less weight, or value, than other investigators to those factors which they might agree on selecting.

Consequently, from the standpoint of that goal of all science which is the consensus of competent investigators, no agreement can ordinarily be expected in the formulation of their ideal types. They will differ both in the factors selected and in the relative importance assigned to each, as is seen in the contrast between the capitalist spirit and the handicraft spirit. This is bias. For this reason, apparently, the ideal type must be very elastic both in its selection of factors and in its relative weights of the factors, in order to get a consensus of investigators. This lack of elasticity in Weber's ideal-typus is its fatal weakness. It permits each investigator to construct his own Utopia by selecting and valuing, which may or may not fit the historical or contemporaneous facts. But a highly elastic ideal-typus is required in all concerted movements, including science, where a consensus of opinion must be arrived at in order to reach a joint decision or joint action. The elastic ideal-typus is not perhaps hopeless in the science of economics, though it probably is not to be expected, since economists are not compelled to agree on a verdict, like a jury, and so they are free to select whatever facts they

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choose and to give whatever weights they wish. If so, however, the goal of science is not reached.

The corresponding difficulty with the ideal-type is in the subject-matter itself, namely, human beings in their economic activities. These beings are both subjective and objective - subjective in their emotions, motives, wishes, pains, pleasures, ideals, etc. - objective in their behavior. They have their subjective bias, just like the investigator. In order to "understand" their behavior, in addition to measuring it or its results, the investigator must "put himself in their place" and do, in imagination, what they do under their conditions of time and place. This is the service performed by Weber's ideal-type. But, again, the investigator in formulating his ideal type, must do it in the form of their motives or emotions, which he can presumably understand, the motives thereupon being considered to be the cause, or rather Weber's "value", for them, of their behavior. If he selects one of their motives, like self-interest, then he is in the position of Menger, with his typical trait and relation. And he cannot include all of their motives, for that would take him outside the field of economics. He must select enough and no more than are necessary for economics. This puts him in the position of Weber.

But even here, in economics, the investigator does not have a workable ideal-type, because it is too extensive, for he must distinguish the motives - the motive of profit from the motive of interest or rent, or wages or production, or consumption. Thus in creating the ideal-type of Capitalism, as we have above indicated, Weber, followed by Sombart and Tawney, constructs the motive of Capitalism, which he names the "capitalist spirit." The capitalist spirit creates capitalism. It consists, as indicated above, in the striving for unlimited profit in the form of an accumulation of money or money

values without any sense of obligation or duty towards others in the process. Opposed to this is the handicraft spirit of the guilds of the Middle Ages, which consisted in striving only for enough goods to satisfy needs without depriving others of their similar share. When the capitalist spirit comes to be restrained by rules and regulations, as was the handicraft spirit by guild rules, then capitalism, as the ideal type, begins to decay.¹ The capitalist spirit is a striving for unlimited profits without a sense of justice, and the handicraft spirit - applicable also to the trade-union spirit - is a striving for justice at the expense of profit.

Evidently if this is the outcome of the method of ideal-typus, it sets up, after all, the bias of the investigator in selecting the factors which constitute his ideal-type. This outcome arises, apparently, from trying to find a specialized motive fitted to each special type of behavior, and thus to treat each motive as though it might be pictured - utopia-wise - as working itself out in behavior as a separable ideal-type in itself.

This defect, apparently, can be corrected by creating an ideal-type which shall include all of the motives as shown in all of the behavior. But this would be the scientific ideal-type, not the pedagogical, propagandist or personified. And it is this form of the ideal-type which is useful in science. It is found in all words ending in "ism." Instead of the capitalist "spirit" as the motive for unlimited pecuniary gains regardless of the effect on others, this capitalist "spirit" would disappear entirely and only "capitalism,"

¹ Sombart, op. cit. See review of this work by Commons and Perlman in American Economic Review, 1929.

as a special historical stage, animated by all kinds of motives, emotions and circumstances, would be the ideal-type. There would then remain, indeed, great differences of opinion among investigators as to the emotions - subjective valuations of capitalists and as to the good or bad effects of capitalism. The question why would therefore not be answered, but there would be a nearer approach to the goal of all science, namely, agreement of investigators upon how and how much.

This meaning of ideal-typus is its scientific meaning. Two questions arise, however, suggested by the problem for whose solution Weber set out to create his ideal-typus. (1) Does this scientific method, eliminating the subjective altogether, reduce economics back again to the purely mechanistic science of the classical, communistic and hedonic economists? What is the Scientific Ideal-type? It is here that we shall find the method of investigation. (2) Does this scientific ideal-type, thus ascertained, eliminate, as did those mechanistic types, the ethical aspects of economics which Weber endeavored to incorporate inseparably with the economic? What is the Ethical Ideal-type? It is here that we shall find the meaning of Reasonable Value. We consider first the scientific ideal-type.

3. The Scientific Ideal Type. - The main contribution of Weber's ideal-type is that it yields a principle of classification for a whole set of ideas already in common use to indicate vaguely the part-whole relation. This classification includes such terms as capitalism, trade-unionism, communism, socialism, business, the "economic man," the "law of supply and demand," etc. These concepts take their places as special cases of the universal concept of an ideal-type which is set up, not as scientific instruments of investigation, but as mental figments picturing to the imagination certain relations of parts to the whole which later are the subject matter of investigation. In

order, then, that these vague and undefined concepts may be reduced to instruments for scientific investigation we require to examine the reasons why they, as ideal-types, are not fitted for science and how they may be changed into the mental tools which economic science can use.

The ideal-type, as formulated by Weber, can be corrected for the bias of investigators by being made sufficiently elastic for all investigators instead of fixed by each for himself. It can be corrected for the subject-matter by being made primarily objective in behavior and secondarily subjective in motives and emotions, instead of the reverse. Assuming these two corrections to be made, so that the ideal-type is elastic and objective, there still remains a third defect. The ideal-typus, as formulated by Weber and used by him and Sombart, even though it be made elastic and objective, does not contain in itself the concept of Time with its main characteristics of motion, repetition and variability, and, especially does not contain, in itself, an objective formula of future time, which we conceive is what economists mean when they revert to psychology. The ideal type, as a part-whole relation, is formed by the investigator to be used as a guide in investigation, but it is fixed in advance of investigation. Hence if facts are discovered which do not fit the type, the type itself, as formulated by Weber, does not change to fit the facts, but they are brought in as "hindrances" or as "aids" to the pure evolution of the type. Yet these hindrances and aids are really of the essence of the type if it be looked upon as a formula for the investigation of a moving, changing process, and especially if it be looked upon as a formula for expressing the uncertain expectations of the future which dominate the activity of human beings in the ever-moving present.

We must, then, ascertain the reasons for this time-defect in

Weber's ideal-typus. We enumerate them here, in advance, reserving their elaboration for other places. First, and a fundamental, is the foundation of economic theory upon the relations of man to nature instead of the relation of man to man. Second, the failure to start economic theory upon an economic bond which ties individuals together, such as debt and property rights, and the reaction of the historical and socialistic economists towards tying them together by non-economic bonds, such as ethics, sovereignty or analogies to organisms. Third, the failure to distinguish three separable ideal-types of economics, namely engineering and consumption economics, which are relations of man to nature, and political economy, which is the relations of those economic expectations expressed by rights of property. Fourth, the lack of theories of relativity of time and space, propounded only recently in physics. Fifth, a mistaken concept of custom as something that comes from the past instead of something that looks to the future. With the corrections suggested by these defects, the concept of futurity becomes objective and even measurable, and displaces thereby completely the need of looking inward for the unknowable emotions of individuals. Futurity becomes the scientific substitute for Weber's subjective spirit.

If, then, we can construct, not an ideal-type which may or may not fit the facts, but a mere formula as an instrument for investigation which shall contain all of the variable factors which all investigators might include, but which can be weighted with highly variable importance of the several parts, according to time and place in the functioning of the whole, then it may be possible to combine in one evolving synthesis the fruitful method of research contained in Weber's ideal-typus. This we conceive to be possible if we start

with an adequate and therefore complex formula of transactions, whose expected repetition, duplication and variability is a going concern.

Another fruitful contribution of Weber's ideal-typus is in its bearing upon the relations between theory and practice. The ideal-typus is not a theory - it is a formulation of the problem of relation-ship between the factors, which problem the theory attempts to solve. Yet it requires a preceding theory in order to formulate it. Hence it is a stage in the formulation of theory, which, at that stage, we name an hypothesis. An hypothesis is a statement of what we now expect from our present knowledge of the factors and our present understanding of their interrelations. And the form taken by this expectation may be named the scientific ideal-type. But when, on investigation and experiment, we "try out" the hypothesis - the ideal-type - and find that it does not exactly fit, then, if not dogmatic or propagandist, we change the hypothesis to get a better fit. Then this fit is another stage of a modified ideal-type, and so on. Then, further, if we take into account the variability of the factors themselves and endeavor to construct an hypothesis of a process, rather than a structure, we have another ideal-type, this time of a moving, changing whole, which we must again repeatedly revise to fit the changes which historical research brings to light.

Instead therefore of a fixed ideal-type which Weber names an utopia and which indeed becomes more utopian if it remains fixed as we proceed with our investigation, we have a changing hypothesis, taking in new factors or retiring older ones, always seeking to make the utopias, which our minds construct, less utopian. Thus theory becomes, not only a mental tool for investigation of facts, but becomes also an interpretation, correlation and expectation of facts. In short, theory becomes a different meaning of Weber's "understanding

not the pedagogic meaning of fellow feeling but the pragmatic meaning on which we predict and act.

On account, however, of the novelty and complexity of the effort to understand the part-whole relationship, and in view of Weber's ideal type as a tool for investigating that relationship, we are required to make more precise the meanings, not only of our mental processes, but also of the objective relationships to which such processes refer. This should give to us the mental tools, which, as John Locke intended, should enable us to separate our mental processes from the objects investigated, an equipment which is none other than that of keeping our personal bias out of our theory. We give, therefore, what we understand as the meanings of words for the purpose of expounding a theory of the scientific process of arriving at the understanding of the part-whole relation in economics.

First, as to the very starting point of our theory, the meaning of a Fact itself. We pretend to base our theory on Facts. But what are facts? A fact, in its beginning, is only a first impression from the outside world, which we call an object, a thing. Next, it begins to have meaning, but only because we construct that meaning out of our previous knowledge and experience, which we may name Instantaneous Memory. We read our own life history into the facts and - we may be mistaken from the very start. At this stage the fact is a Percept. It does not correspond at all to the whole of reality - it corresponds only to a special attribute of the whole, and thus it is only a pragmatic convenience for us in approaching the next stage, the stage of concept.

A Concept is a similarity of attributes, such as the concept use-value, transaction, person, going concern. Is a concept, then, a

part-whole relation? Is it a Whole, of which the parts - that is, the percept - are constituent wholes? Here is the first double meaning of the word Part - or rather a false meaning of Part. A percept - that is, an object - is not a part of which a concept is the whole. A percept was only a special attribute - like yellow, or a special complex of attributes, like a yellow flower - of something that was unknown as a whole; and a concept is simply another pragmatic convenience by which we summarize in one word - a noun - a similarity of percepts.

Next, we distinguish Principles. While a concept was a similarity of attributes, a principle is a uniformity of motions. Here we distinguish the subjective from the pragmatic meaning of principle. The subjective meaning is that of a cause, a reason, a law, compelling, as it were, the motions to be similar, as when I say, This is a law of nature, or These are my principles which I will not abandon. This subjective meaning was the source of Weber's ideal-typus. But the pragmatic meaning of principle is nothing but the uniformity itself. With this latter meaning, each motion, by itself, whether simple or complex, was a fact, a percept. It was not a part-motion, of which the principle is the whole-motion. A principle is a uniformity of repetition of either part-motions or of whole-motions. It is a convenience for summarizing similarities in one word - but the other convenience of language makes it misleading by giving to it the name of a noun instead of a verb. Use-value is a concept - a similarity of qualities; but using and valuing is a principle - a uniformity of motions. Transaction is a concept, but uniformity of transacting is a principle. Going concern is a concept, but willingness is its principle, that is, its expected uniformities of transactions. Adam Smith is a complex

concept of a person, but Smithizing is a principle of a certain uniformity of reasoning.

So it is with our concept of a "factor" as employed in the phrase "limiting and complementary factors." As concept, a factor is a unit, an individual, an object - say, potash or Smith; but, as principle, a factor is a broad-caster of uniform activities. It is not potash that is the limiting factor in agriculture - it is the chemical, electric, or whatever activities of potash, operating with its peculiar uniformities on other activities. And a person is not a noun - he is a verb of all the activities he is expected to radiate in dealings with nature or with other persons. It is these activities that are the limiting and complementary factors, and their uniformities are their principles.

We have, therefore, not yet reached the part-whole relation. Complexity is not a relation of parts to the whole. It is just complexity, and there is no understanding of how, or why, or what for. There may be similar complexities, like flowers, or similar simplicities, like yellow. In fact, that is what we mean by a hierarchy, or classification, of concepts or principles. A genus is a wide similarity of more simple attributes or motions; a species is a more narrow similarity of more complex attributes or motions. Animal is genus, man is species. The latter is not a part of which the former is the whole. The relation is taxonomic, not functional (Veblen).

In order, then, to proceed to the part-whole relation we need another name for the mental process. We name it a Formula. A formula is somewhat like Weber's ideal-typus - it is a mere mental tool constructed for research and action, and it is a formulation of the relation of the parts to each other and to the whole. The parts are themselves wholes, requiring each its own formula, and so on down to

the parts which we consider ultimate for our particular science.

But the decisive question is, Is it a Formula of concepts or a formula of principles?

Take the concept, Going Concern. Is it a formula of different similarities of individuals, of tools, machines, products, related to each other, or is it a formula of different uniformities of acting and transacting?

Or take the concept of the individual himself who is a part of the concern. Is he the concept of Smith or the principle of Smithizing? Or take the concept of a transaction. Is it the relations of individual wills to each other or is it the relation of different kinds of similar volitional activities to each other?

Here, we may say, is the practical application of Weber's Ideal-type - it consists in the formulation of concepts and principles into a formula which shall be used without change as tools for investigation of facts. It is the familiar problem of definition. But definitions cannot be formulated without a theory of the functions to be played by all the parts in the final outcome. It is not enough to say that one definition is as good as another provided we use it always with the same meaning. Each definition must be fitted to the problem of research and action which we have in mind and then only is it to be, or can it be, used without changing the meaning.

We need to distinguish, however, first of all, whether we use it as a concept or as a principle, and whether we use it as a formula of interdependent concepts or interdependent principles. Take the five part-concepts on which we conceive economic theory rests, and their relations to each other and to the whole which we call Willingness. Each is both a concept and a principle.

The concept of Scarcity is that formulated by Menger. It is a concept of pure number existing only in the mind - a ratio existing between a quantity of things wanted and the quantity available at the time and place. As such a typical relation, or ideal-typus, it is a whole composed of two interdependent parts, each of which is itself another whole composed of its own interdependent parts. And the pure number - the ratio - is both the concept and the measure of the interdependence itself. But Scarcity is also a principle, when it is conceived to be the uniformity, with variability, of the motions of living creatures relative to the chemical, electric or other motions of the things wanted. It is this principle - not the concept - that becomes a functioning part in the formula of the whole of Willingness.

Also Efficiency. The concept of Efficiency is again a concept of pure number, existing only in the mind. It consists of the ratio between two parts, the output and input during a unit of time. But the principle of Efficiency is the uniformity, with variability, of the activities of human beings relative to, again, the chemical, electric, gravitational, or other motions of the instruments used and the products yielded.

The concept of Custom is that of the binding force which groups of individuals have over individual members, but the principle of custom is the repetition, with variability, of the acts and transactions of individuals insofar as this binding force of the group continues to operate. Hence the concept of sovereignty is like that of custom, differing in the use of physical power as the binding force, but the principle of sovereignty is the repetition, with variability, of the transactions of superiors with inferiors who are subordinate to their use of physical force.

The concept of Futurity is that of expected events, but the

principle of Futurity is the uniformity of repetition, with variability, of acts and transactions performed in the moving Present with reference to future events as expected hindrances, aids, or consequences.

These five part-principles constitute, in their interdependence, the whole of the principle of Willingness. This, as concept, is the complex attributes of human beings, but, as principle, it is the expected repetition, with variability, of the total of all human acting and transacting within the limiting and complementary interdependence of the principles of scarcity, efficiency, custom, sovereignty and futurity. The functional relations are those in which a change in one dimension changes all of the others and thus changes the whole transaction or concern. If efficiency increases, scarcity diminishes, a variation of custom occurs, as well as the expectations of the future and perhaps the use of sovereignty. In the formula of transactions it was noted that a change in any one of the dimensions of opportunity, power and competition is a change in the other two. Changes in its functional constituents is a change in the whole of willingness.

Hence we reach the concept of going concerns as the expected repetition of interdependent transactions, the principle of which is Willingness, and the formula for which is the mental formula previously offered, of the changing interdependence of all its limiting and complementary principles.

This formula, we take it, fits Weber's concept of an ideal-typus, but we name it "scientific" instead of pedagogical or personified, because it is a formula including all of the factors instead of a few selected ones, since it does not depend upon any selected subjective emotions for its formulation, and because it furnishes an elastic outline of the interdependence of all factors which must then be

investigated both separately as part-whole relations in their own right and interdependently as limiting and complementary factors. Its claim for scientific availability as a mental tool of research rests upon the same distinctions as those made by Weber between philosophy, or metaphysics, and methodology. It is solely an instrument of method, and its method consists in separating distinctly the science of human activity from the sciences of mechanism and organism. It is by means of this separation of the sciences, that Weber avoids philosophy and metaphysics. For methodology is the logical structure of the concepts and principles in which each science formulates its own knowledge or its means of knowledge¹ within its own field. The limits of methodology are the points where the particular science passes over into other sciences, and it is the attempt to pass beyond these limits that is the philosophical or metaphysical disturbance. When once it is perceived that these limits cannot be passed, in our present state of knowledge, then the problem of the method does not get confused with the problems of philosophy or metaphysics. It is this distinction that enables us to define Willingness, Custom, Futurity and Value pragmatically as we do, without metaphysical or philosophic implication.

For example, the problem of whether the Will is "free" or "determined" is a "metaphysical" problem from our pragmatic standpoint and therefore beyond the limits of the methodology of political economy. But it is not metaphysical from the standpoint of psychology or neurology, which investigate, by means of their own peculiar formulae, the relations between mind and body. We take the will as we find it, namely the whole activity of human beings in their actions and transactions, and then construct the concepts, principles and formulae, which, it is believed on our present knowledge, will serve to investigate all the problems of political economy, without endeavoring to

1 Schilting, op. cit. 624.

bring over the so-called metaphysical, but really psychological problem of freedom or determinism.

Here we recognize, however, that there can be no science of political economy if the will is free, in the sense of wholly capricious and undetermined. This requires us to look for uniformities in the operation of the will, if we would have an economic science of Willingness. We look for such uniformities, and we look for them, not merely in the scientific sense of how and how much, applicable to physical sciences, but in the volitional sense of why, which we can "understand," in the meaning given by Weber. Yet we differ from Weber's why. He found, which is undoubtedly true, that Value is a purely individualistic, subjective, capricious emotion, subject to no logical rules whatever. In this respect it is like the subjective will. If, then, we rest our science on subjective emotion, we can have no social science and must resort either to metaphysics or to a science which deals solely with individuals, namely, pedagogy. This was Weber's difficulty. He introduced, after all, into his methodology, that which for the purposes of social science, is an individualistic entity, as far as we know, whether "free" or "determined," is highly capricious, unaccountable and especially individualistic. But if we rest our search for uniformity upon our transactions, instead of individualistic emotions, then we do have many uniformities which we can understand in our own consciousness of why they are uniform, because they are uniformities which we know by experience.

One of these uniformities is Custom. Although individual emotions, or subjective valuations, or the subjective will may differ so capriciously that no scientific uniformity can be predicted upon them, yet we do find uniformities of action when we look to transactions, instead of emotions. Here, indeed, however, the metaphysical problem,

or rather the problem of psychology instead of economics, sets a limit to the methodology of economic science. Psychology, or neurology, finds certain individualistic uniformities named Habit, and this uniformity, from the time of Hume, was not distinguished from Custom. Custom was merely uniformity of individual habits. Economic Science takes this as a presupposition which it does not necessarily investigate, but the methodology of economic science requires us to look further - indeed to set up an ideal-typus of a social force or pressure which compels individuals to conform regardless of their individual habits, and which can itself be investigated in its own right, ever and above the presupposition of habit. Such investigation is historical, and its fruitful source of data is in the legal and arbitral decisions wherein custom is converted into common law. Here it becomes the function of methodology to formulate a definition of custom, not on the psychological and individualistic basis of Habit, but upon the social pressure that compels uniformity of action by all individuals within the jurisdiction. Such a definition, drawn from such sources, indicates penalties or sanctions imposed on those individuals whose capricious emotions, valuations or wills do not conform to that which we call the "working rule" of the custom. With such a concept of custom economic science can and does operate as an instrument of investigation and it serves to explain and understand.

But it does so because it brings in another principle peculiar to the social sciences and not found in the concept of Habit, namely, the principle of expectation which we name Futurity. Habit is a repetition of acts determined - if they be "determined" - by physiological processes that occurred in the past, but the binding, or "determining" force of custom is the uniformity of expectations of gain or loss imagined in the future. This "Futurity", while from the subjective

standpoint it belongs to the individualistic science of psychology, yet, from the objective and social standpoint, it is none other than the existing rights, duties, liberties and exposures based on social sanctions.

This principle of futurity furnishes also all that is meant objectively by the concept of value or purpose, and therefore the capricious and lawless subjective value or will of Weber, which is incapable of the uniformities required by science, is displaced by those uniformities of valuation and willingness which are the subject-matter of both jurisprudence and economics. But no science requires absolute uniformities in order to be a science. Even astronomy allows for variabilities, much more so economics. The very fact that we have a great complexity of forces - or rather, principles - operating together prevents exact repetition of any one of them, and the difficult problem of economics is so to correlate the various principles that the variabilities may be explained and understood, not as unaccountable caprices of individual values and wills, but as changing interrelations of the several principles which constitute the whole of the principle of willingness. The variabilities may be said to be the as yet unsolved cases of functional interdependence of the factors.

Thus we reach the conclusion that the science of political economy is not a body of facts but is a theory of the interdependence of all the part principles which compose the whole principle of willingness. The theory itself is not something that can ever be made to correspond to reality, in Locke's or Menger's sense of a copy - it is only a method of investigating reality. If there is a consensus of method among competent investigators then we have approached, as Peirce asserted, as near to reality as the limits of human capacity permit.

It is for this reason that the same method is used for investigating that alternative to Reality which we name Reasonable Value. This alternative is the Ethical Ideal-Type.

4. The Ethical Ideal-Type. - The ethical ideal-type is Reasonable Value. It contains, like the scientific type all of the suppositions and presumptions, all of the part principles and the whole principle of willingness. But it gives different weights - that is, different values - to different parts. The parts are not weighted so as to conform to reality, in the spirit of science, but so as to conform to an unreality which yet may be made real by the concerted action of willingness. Weber did not himself consider the ethical ideal to be an allowable meaning of his ideal-typus. But here a double meaning of the ethical ideal must be noted, involved in his meaning of the Endpunkt or ultimate goal, which he excluded. The one meaning is that of the unattainable, the other of the attainable. Weber excluded both. But the one properly to be excluded from consideration is only the unattainable, like, we may say, heaven, hell, communism, anarchism, universal brotherly love, universal virtue, or happiness. The attainable "Endpunkt" is Reasonable Value. A theory of the attainable is as much a scientific theory as is a theory of the attained. For, a theory of willingness is always a theory of something that is reaching towards the unfinished future, which, at this stage, is Ethical. But when the Future is finished by becoming the Present, then the same theory of willingness becomes an historical theory of that which has been attained. Ethics is the future, but History is the past, of the same principle, Willingness.

This meaning of ethics is, again, an ideal-type constructed for the purpose of investigating and understanding, objectively the nature

of transactions and going concerns, and must be distinguished from that ideal-type of subjective ethics which is capricious and individualistic. Our concept of the Ethical ideal-type is based on a workable consensus of opinion of all who participate in transactions, and while it means what ought to be, contrasted with what is or was, it is not the subjective ought of capricious individuals, but is the consensual ought of those who work together and are dependent one upon another for the continuance of their cooperation. It is not what I think ought to be but what We think ought to be, as a going concern.

Weber had in mind what I think, not what We think. The formula by which this ethical consensus of opinion is reached is nevertheless the very same ideal-type of Weber's contrivance. It is found throughout all judicial reasoning. It consists in maxims, standards, fictions, personifications, analogies, and so on, constructed mentally for the purpose of rendering justice. Perhaps the most elementary ideal-type, constructed during the past three hundred years and still undergoing reconstruction as new cases arise, is that ideal of a willing buyer and a willing seller, which is set up as the ideal-type of economic relationship out of which a reasonable value ensues.

Likewise that ideal-type created in the sixteenth century of the common-law on which the greater part of the modern credit system is based, the "assumpsit" that "everybody is supposed to have undertaken to do what is in point of law, just and right." (Bouvier, Assumpsit) This assumption may be merely an implied promise where there is no express promise, or it may be a pure fiction. Upon it is based the science of jurisprudence. In fact, practically all of the Fictions which so incensed Jeremy Bentham, since they are legal assumptions that something which is or may be false is nevertheless true, are ethical ideal-types for the purpose of adjusting old rules of law to new con-

ditions. And they are based evidently on the experience of a uniformity in the operation of wills, instead of capricious unknowable subjective wills, and are therefore strictly scientific.

The fiction, as used in legal reasoning, whether it be that of an "implied" promise or a sheer outright fiction in the technical sense, is a fiction only by way of contrast with preceding notions of a capricious arbitrary will. This preceding notion was applicable to the preceding feudal period of violence, robbery, capricious and despotic control, but when peaceful industry began to come in, with its "customs" of merchants, in buying, selling and fulfilling their promises, then the observed uniformities of these capitalistic transactions furnished grounds for implying that an individual plaintiff or defendant who was a party to a transaction, no matter whether in his own mind he actually intended it or not, yet he did intend to do what could be implied from the principle of uniformity of action.

No sciences other than the social sciences, especially economics and law, can be a science if it pretends that what is false is actually true. Physics and biology can not read into electricity or a colony of ants, except by poetic personification, any purpose, intention, implied promises, or fictions, to do or not to do anything. This is the solid foundation of Weber's insight¹ in setting up his ideal-typus as peculiar to social sciences, distinguishing them thereby from physical sciences. He was wrong, however, only because he rested upon the capricious subjective valuations of individuals that cannot be reduced to the logical consistency required by a science. All that science requires for its methodology is certain uniformities of motion, and

¹ Rather that of Rickert his teacher. Rickert, op. cit.

this is furnished, for economics and law, by the Anglo-American common law with its foundation on custom, which is none other than expected uniformity of the will-in-action.

Furthermore, economics or legal science could not read into the capricious subjective valuations or wills of individuals any dependable purpose to make a promise or to fulfill it if made. But if a custom of merchants has grown up, which is nothing but a certain expected uniformity of wills, then hundreds of implications, assumptions and fictions, based on that uniformity, can be read into the mind of individual plaintiffs or defendants regardless of whether they were true or false respecting what went on in the subjective recesses of those minds.

The same is true in economics as in law. The fiction of the "economic man" is simply an assumption of a certain uniformity of the will. Its defect was that it was assumed to be the only uniformity, whereas it is continually modified by limiting and complementary uniformities, all of which, insofar as they are uniformities, we have named "principles." In fact, the economic and legal fictions and implied promises, purposes, intentions, motives, etc., based on the principle of uniformity, but inconceivable in the physical and organic sciences, are the only mental tools of investigation by the use of which economics or law can be made into a science. All of them may be generalized in the one concept, Weber's ideal-type, whether it be the scientific aspect of that type when applied to past time, or the ethical aspect when applied to future time.

The largest employment of the ethical ideal-type is in the so-called "physical valuation" of railways and other public utilities, where an alternative going concern is constructed in imagination by engineers, accountants and economists, for the purpose of bringing the

actual concern of history into conformity with what are deemed to be reasonable capitalization, reasonable prices to be charged to the public and reasonable services to be rendered to the public.

These and similar ideal-types will require our attention in the concluding chapter on Reasonableness. We introduce them here with reference to Weber's significant contribution to the methodology of economic research. They are constructed, it will be noted, not on his individualistic emotions of value, nor on individualistic concepts of subjective will, all of which are widely different, capricious and without any uniformity. But they are constructed on the assumption of certain uniformities of wills, for the express purpose of commanding controlling, and bringing about a wider extension of that uniformity in accordance with what is deemed to be the ethical ideal-type applicable to that class of transactions. It is this kind of uniformity which makes possible a theory of economic willingness, whether it be a scientific theory or what has happened in the past or an ethical theory of what ought to happen in the future.

The question now reverts to the point where we started. Does our formula of transactions and going concerns furnish an alternative to Weber's methodology, which, while being scientific in the sense employed in physical and organic sciences, yet also incorporates the peculiar quality of social science which distinguishes it from them? The answer is that it is scientific in that it is not based on subjective capricious entities of magic, or alchemy, or value, or will, but is based on uniformities of behavior, like all science; and that it is social in that it distinguishes from the physical and organic sciences by discovering social uniformities in the operation of human wills, whereas they discover uniformities in the operation of physical and living bodies. These uniformities, for social science, all turn on

the principle of Future Time, a principle not found in physical or organic sciences, and made possible in social science only by the institutions of language, number, and security of expectations. It is doubtless true that, for pedagogical and propagandist purposes, these scientific principles need a different methodology, the method of Personification. But it is also true that personification is the very contradiction of science, and that the last science from which it is being painfully eliminated is that in which it is the very subject-matter of the science, the human will itself.

(To page 71, chapter on Willingness)

that even the custom, which subordinates me to others, might change - or rather that the immediate persons who practice the custom as it affects me, might change their minds relative to one or all of these existing particular rights, duties, liberties and exposures.

This implies that they are volitional beings, and not animals or forces of nature, and can therefore be approached in that volitional way which we call persuasion or argument. In other words they are themselves, respecting the particular relation under consideration, in the status of liberty. If, however, they are bound by necessity, coming from the forces of nature like electricity or animals, or if they are themselves subordinate to a superior authority, then I cannot expect to make any change in my status. But if I believe it is a matter of choice with them then it is full of meaning to say, "you ought or ought not" to keep him in his correlative status, which, though disagreeable to me, is agreeable to him.

Thus, in an existing status, my rights, psychologically, are my feelings of expectation that I can call upon a power, superior to myself and others, to aid me in imposing my own will upon others, and my status is therefore one of a feeling of security of expectations in that particular class of transactions. But, if I am dissatisfied with my status, and if that power which determines my status is free to choose, then my feelings of my rights are directed towards an alternative imagined status or position, which I feel I ought to have at the hands of the superior volitional power. I do not have the right, but I ought to have it, in the sense that the superior authority ought to furnish it.

It follows that the only way in which the superior authority can furnish that right to me is by imposing an equivalent duty on another, or many others, such as the duty of performance, forbearance or avoidance. Consequently my feeling that I ought to have the right, and that the superior authority ought to afford it, is also the identical feeling on my part that the opposite party or parties ought to conform to my desired security of expectations. If, of their own free choice they do not, then the superior ought to indicate his will that they must or must not, and ought to follow it up by action, if necessary. Thus my feeling that I ought to have certain economic rights which I do not have is a three-fold feeling of comparison of (1) an existing and a different imagined status for myself, (2) an existing and a different expectation of performance, avoidance of forbearance by opposite persons, and (3) an existing and a different performance, avoidance or forbearance of the superior persons who make the rules, all on the assumption that they are free to choose but I am not.

The foregoing relates to feelings of my rights, actual and alternative. Conversely, the feelings of myself respecting my duties, require again the distinction of existing status of expectations from an alternative status of expectations. My existing duties are my expectations that the superior power will command me, if occasion arises - an "operative fact" on my part - to obey by way of performance, forbearance or avoidance, in which case I am in the status of feeling that here and now I must or must not perform, forbear or avoid. But if I am dissatisfied with this status and

have a feeling that the superior authority has liberty of choice and might be induced to change its mind, then I set up an imaginary alternative status of no-duty for myself and no-right for the other party or parties, respecting my proposed and desired particular performance, avoidance or forbearance. The fact that the superior can change his mind is the basis of the feeling that he ought to do it and thereby place me in the alternative status of liberty, and place the opposite person in the alternative state of exposure to the good or bad consequence of my liberty. Thus my feeling that I ought not to be subjected to an existing duty is a threefold feeling of (1) comparison of my existing status of duty of performance, avoidance or forbearance, with an alternative status of liberty; (2) a comparison of existing and different expected commands which constitute that status, addressed to me by opposite persons who have the existing right to command me; and (3) of a different attitude of the superior authority through the instrumentality of whose existing commands to me the opposite person enjoys his status of right to command me.

In stating the foregoing choice of alternatives we have already stated the status of liberty and exposure, which are the alternatives respectively of duty and right. My liberties are my feelings of a status of freedom from compulsion by a superior power on behalf of opposite or collateral persons, such that I may do or not do with others or with the products and services of others what I wish to do under the circumstances. Alternatively, if I do not have liberty because my duties place a limit thereon, then I have a feeling that I "ought" to have it and that my

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duties ought to be relaxed, both by the opposite persons and by the superior who backs them up. And my exposures are my feelings that, since, I cannot have the aid of the superior, I shall be forced to depend upon my own abilities in meeting the uncertainties of obtaining what I want from opposite persons in my transactions. Alternatively, I feel that I ought not to be exposed to the unrestrained liberty of others, and that they ought to have the duties, which I desire to have imposed upon them by that superior authority.

The question then is, can I feel an existing status, and can I feel my imaginings of an alternative status? Do we actually feel our position in a concern - whether a moral concern like a church or club; an economic concern like a producing and selling organization; a political concern like a political party or the State itself? Do we actually feel the attitude of opposite persons in our transactions, and the attitude of superior persons who command us, and do we feel that they are in position to change their mind if they wished. The answer is, we do at times. At what times do we feel our status? We feel it when, in view of the actions or transactions in which we wish to perform, forbear or avoid, the concern, or rather the dominant actors in the concern, come into our consciousness as a part of the whole situation that is expected to modify my actions or transactions differently from what I should like. We do not feel our status all the time - we feel it only at the time when volitional behavior of opposite parties or superior authorities bursts upon us as a limiting factor in our transactions.

Our feelings change so rapidly as we go along, and they are founded, perhaps, upon vibrations within us of electrons and protons having velocities as rapid as trillions per

second, that, as in all other cases, we cannot know what our feelings actually are in terms of motion - we can only know - as we know the color red which does not exist in the universe - what those vibrations within us mean for us as we go along. The whole thing is quite superficial in terms of ultimate motion. But in terms of my own motion, as a whole personality, it is quite real. We do not need physics or physiology to interpret it. We must act - simply because, somehow, we feel that we must live, though there is no reason in the cosmos why we must live, unless we personify the cosmos, which is proper enough if we feel that we ought to live. In such case we have, what in the history of the race, has been the most powerful of all feelings of status - the feeling of subordination of ourselves and all other persons to a divine will or wills which we feel that we can persuade, mollify, enlist, or avoid.

Here, evidently is the historic doctrine of divine rights. But it is well-known that divine rights are only a part of the total status of all individuals believed to be subordinate to the divine will. There are divine duties, and the only reason for claiming divine rights is the purpose of imposing equivalent divine duties on others. But there are also divine liberties, and the founding of America by the Pilgrims was exactly on the feeling that, whatever earthly ecclesiastics might claim by way of their own idea of divine rights, the Pilgrims had a superior divine right, equal to the corresponding divine duty of the ecclesiastics to let the Pilgrims alone, and this was, by proper analysis, the feeling of a status of divine liberty, superior to the existing

earthly liberties, to worship and live as they might choose. Logically, of course, and practically as well, this feeling left Archbishop Laud in a feeling and status of exposure.

Even when the feeling of divine rights gives way to the natural rights of Quesnay, Adam Smith, the American Revolution and the French Revolution, this powerful feeling of a "natural" status of expectations, alternative to the existing arbitrary status imposed by earthly authorities, was again an appeal, not to a superior arbitrary will, and not to the blind forces of unpersonified nature, but to a superior rational will, "nature" personified, that desired happiness and abundance for us.

If, however, we pass from theology and personification of nature to the actual political and economic going concerns in which I am a participant or member, then this feeling of what others ought to do to maintain my security and reduce my exposure by accepting for themselves, or imposing duties on others, is certainly, at times when their liberty of choice is the limiting factor, a feeling that may arise to the intensity of violence.

We conclude, therefore, that there is a personal feeling of status within existing concerns. This, indeed, is not denied by anyone. Bentham, the founder of hedonism asserted it in his classification of the sanctions which included moral and divine sanctions as well as physical and economic. But while he classified them he did not differentiate them. The feeling of ought was the same as the feeling of hunger. The recent extreme behaviorists also assert it. But this consensus does not go to the root of the matter. Two objections are to be noted. The foregoing discussion is

based on the strictly egoistic assumption that the individual is animated solely by his own interest regardless of others and is therefore always asserting his rights and liberties and endeavoring to get rid of his duties and exposures. This is entirely consistent with the most selfish egoism. The other consideration noted, especially by behaviorists, is that, even granted the subjective ethics, whether egoistic or altruistic, it is not a subject of science because it is not quantitative and cannot be measured.

Considering the first objection, the foregoing discussion does not go to the real issue of subjective ethics, namely, is there a more ultimate subjective purpose, which, to the individual, apart from God or Nature, is superior to the immediate purposes which we have discussed, and which commands or induces him, of its own internal power, to act in exactly the opposite direction to that which we have described. Instead of asserting rights and liberties in addition to those which he now has, is there an internal force that leads him to set up ideas within himself, and to act accordingly, that he ought to give up existing rights and liberties and choose the alternative exposures and duties? In which case he, of course, yields to others the liberties and rights, and relieves them of the exposures and duties which they now have within the existing scheme of working rules of existing concerns, whether political, economic or moral and, if he has within himself this more ultimate standard of working rules, which, for himself, is superior over existing institutions, what is the nature of this standard? Is it the greatest happiness of all mankind - the principle of Bentham and the

utilitarians; or is it the Perfection of Human Character and Personality - the principle of the Intuitionist Schools? Is the ultimate standard Happiness, or is it Conscience?

There is in economic science, as set forth by Macleod, a class of valuable objects more important than all others in modern economics, which may help us to approach more closely to this ultimate problem of human character and personality, and also to the problem whether subjective ethics is quantitative and may be measured. These are the incorporeal and intangible properties of good credit and good will. They may be reduced to one - good will - of which good credit is the special case of good will of bankers and investors, while the principle goes much further than consumers' good will, to which the term has usually been limited. For with the increasing liberty of wage-earners, industrial goodwill is an increasingly important asset, far more valuable than the compulsory service of slaves, serfs, and cowards.

A negotiable debt is bought and sold, but the value of that debt is not merely the expected legal enforcement of contracts, nor the expected economic coercion of profit and loss imposed by the business community if he does not pay, nor the expected ability of the debtor to pay - it is also the "conscience" of the debtor. Macleod's "good credit", which, though it has legal sanctions against fraud and the economic sanctions of Knapp's pay community, has also the more important personal sanction of obedience to one's own conscience. Whether the person having "good credit" has also a "good conscience", is known, however, by bankers, investors

and speculative purchasers of his notes and securities, only by inferences drawn from his repeated behavior; but, if they believed that he did not have a good conscience, then "his credit" would not go very far. At any rate, the doctrine of limiting and complementary factors makes his conscience, along with legal penalties and economic profit and loss, a part of the total limiting and complementary factors in the structure of his "good credit".

So also with the good will of customers, the good will of laborers, even the good will of politicians and judges in framing, interpreting and enforcing laws, and in all of the expected transactions whose expectations is good will. In all of them, "conscience" is a limiting factor in the creation of assets and reduction of liabilities. A negotiable "good will" of a business is sometimes bought and sold separately, but usually as a limiting or complementary factor of a total business which is bought as a total going concern, as in those measurable parts named shares. But that good will is not merely the expected legal enforcement of fair competition, nor the expected willingness and ability of customers to purchase and laborers to work - it is also the "conscience" of all the participants in the concern inducing them to furnish an "honest" commodity or service, at a "reasonable price".

When we analyse the term good-will and extend it properly to similar expectations, we find that it is based on modern expectations of liberty of performance by customers and laborers, and duty of avoidance by collateral persons. And

the very fact of this liberty of performance imposes upon the one who desires to maintain his valuable good-will a personal duty, not only legal nor extra-legal, but conscientious.

On the other hand, it has long been recognized in economic theory, following the much longer recognition in the customs of business and labor, and in the common law and statute law, that there is a limit placed on the scope of good conscience by the competition of those without good conscience. For this very reason the customs of business and labor, the decisions of courts, the acts of legislatures, have increasingly intervened, first by distinguishing between fraudulent debtors and honest debtors, oppressive or negligent employers and fair or careful employers - distinctions not originally or often made in the youth of capitalism¹ and not yet adequately made - and then, by imposing legal and extra-legal duties on the conscienceless, opening a wider and more profitable field for the conscientious. This good conscience, insofar as it can be inferred from behavior and measured by consequences, is a factor in economic theory, sometimes a limiting factor, always a complementary factor, necessarily taken into account in all planning for the future of going concerns.

1 See Commons and Andrews, Principles of Labor Legislation,
ooo.

Still we have not reached that inner sanctuary of the soul where abides that Conscience itself which gives commands to self contrary to the selfish benefits of existing institutions, and we have not found whether its standard for working rules self-imposed is dictated by an ultimate purpose of my happiness, universal happiness, or human perfection. We have narrowed the scope of conscience as a principle of behavior, by the pressure of custom, law and competition. But we have reached that inner sanctuary only by inferences from behavior. Here is where we seemingly must end, but if so, we have not yet found a behavioristic substitute for that historic entity, conscience, that has split the schools of ethics since Socrates and Epicurus. Is there such a thing as a conscience? Does my conscience order me to do this, even though the heavens fall? In the words of Cromwell, a highly conscientious man, "I beseech you, in the name of Christ, think it possible you may be mistaken." No, there is no entity, conscience, irrespective of other consciences. There is a variable factor, conscientiousness, running through all transactions and all going concerns. Conscience is an attribute, not of another entity, the will, but of a larger attribute, willingness. Opposite this entity is another one - the hedonists' pleasure and pain, known as utility and disutility. Is there such an entity as pleasure that can be picked out from the other factors and worked into a system of economics? Not in the practical affairs of human behavior. There is a variable factor of pleasure running through all transactions and concerns. It, too, is an attribute of

willingness. How are the two to be brought together in a single view of the whole of willingness?

We may consider Sidgwick's effort, in 1874, to transcend the Egoistic, Intuitionist and Utilitarian ethics in his every-day ethics of "Common Sense".¹ Throughout his illuminating discussion there runs the implicit assumption, taken over from the older schools of a finished, adult, normal "conscience", giving to its "owner", who is also sometimes its obedient servant, sometimes a willful rebel, the commands, "ought", "ought not". But, on the contrary, if this conscience is an evolving, changing quality, from birth to death, of all dealings with other people, then it is a variable principle of conscientiousness, whose variations are the transactions themselves, retaining its own continuity, however, by that strange process of memory, feeling, expectation, which we name Experience, and which Peirce found to be the psychological accompaniment of all Science and all Practice.²

Conscientiousness is one of the variable limiting and complementary factors, functioning with the others, all of them constituting the whole of willingness as it also moves along in several fields which can be separated in thought but not in fact: - subjectively, through memory, feeling, expectation; behavioristically, through performance, forbearance, avoidance; ethically, through the changing status of

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- 1 Sidgwick, Henry. The Methods of Ethics, (1874, 5th ed., 1893).
 - 2 Cf. Dewey, John. Human Nature and Conduct (1924).

rights, duties, liberties and exposures; economically through changing but inseparable dimensions of use-value, scarcity-value and expectation. Good credit, good-will, in its various forms, is not dominated by conscience - but conscientiousness is its highly variable yet positively limiting factor, failing which there is no good-credit, no good-will, no assets - all are liabilities.

We are using the term "ethics" as Sidgwick does, in its subjective sense of the internal feeling of conscientiousness, and are endeavoring, as he also does, to transfer it to a behavioristic meaning; but are also endeavoring, as he does not, to give to it a quantitative meaning fitted to the economic quantity, Value, which is measured by physical units of use-value, scarcity-units of money and time-units of expectation. Limiting ourselves to the economic problems we need to inquire only what is the application to those problems of Sidgwick's classification of the different rational "ends" set up by the egoistic, intuitional and utilitarian schools of ethics and by his own ethics of common sense. Is the ultimate standard by comparison with which the feeling of ought or ought not gets into the transaction of participants, as well as into the working rules of rights, duties, liberties and exposures imposed by superiors, a standard of Happiness of the utilitarians, or of individual Perfection of the Intuitionists? And if the standard is Happiness, is it my own happiness or is it universal happiness? Evidently, for Bentham, it was universal happiness - his "greatest happiness principle". Three distinctions must here be made: the distinction already

made between conscience and conscientiousness; the distinction between abundance and scarcity; the distinction between private and public purpose.

Bentham and the utilitarians did not have the idea of an evolving principle of conscientiousness, from birth to death, accompanying all transactions in varying degrees. They expressly eliminated custom, which is the continuous course of education for the individual, conducted hourly by elders, superiors, associates, in all transactions, out of which memory, feelings and expectations remodel the animal brain into an "institutionalized" mind. While they recognized "habit" as important, they were strongly opposed to custom, which, instead of being education, was the evil work of authority and tradition, preventing individuals from rational balancing of the pains and pleasures of self and others. They were therefore combating the idea of an inner finished entity, the conscience, by disproving its existence, indeed, but without having the materials for an evolving and changing principle of conscientiousness, whose feelings of pleasure and pain, desire and aversion, follow the "brain patterns" of a mind previously fitted by experience to the status imposed by the rights, duties, liberties and exposures of existing but changing customs and similar institutions. Hence their idea of greatest happiness was not the kind of happiness which institutionalized people want but the kind of happiness which intellectual philosophers think they ought to want. The principle of greatest happiness is good, but it can be worked out in detail only by each of millions of individuals

for himself. Carried to the logical end, this would mean the anarchisms towards which the happiness principle led the utilitarians, checked only by common sense. What people of custom and habit want from others is not to be furnished with prepared happiness, but to be furnished with such a status within the various concerns that they can work out their own details as to their own happiness and the happiness of others in whom they are interested. The ultimate standard of ought and ought not, for minds that are institutionalized, is not happiness as seen by others but institutions that permit happiness as seen by themselves.

The utilitarian ethics was founded, too, on a double theory of abundance and political liberty, and it was this that made it possible for them to overlook the inconsistency between the egoistic my greatest happiness and the universalistic greatest happiness of all. If the State has abolished slavery and all compulsion by physical force, as they presupposed, and if there is great abundance of natural resources and great production of wealth, then nobody can hurt anybody else by taking everything that he can hold for himself. Even a wage system could not exist if there were plenty of alternatives for self-employment. Greatest happiness was great abundance. Not even the realism of Malthus on this point, much less the skepticism of Hume, disabused the minds of the utilitarians, and it was not until long after Darwin's Origin of Species in 1859, that the principle of scarcity began to get into ethics. Sidgwick remarks in his second edition, 1877,

that he had overlooked the theory of Evolution in his first edition, 1874, but that now he attaches "somewhat more importance to this theory than he had previously done". And even so, the importance which he attached was not upon Darwin's fundamental principle of scarcity but upon the idea of relativity and progress out of the primitive ethics of savages, overlooking the misery, conflict and death imposed by scarcity, out of which the progressive ethics was evolved.

During the whole nineteenth century the doctrine of Malthus was directed towards the sinfulness of mankind and advice to wage-earners to exercise moral restraint, and his principle of scarcity never got into either the theory of subjective ethics of an adult normal conscience or the objective ethics of property rights, duties, liberties and exposures. If property is the scarcity principle operating through custom as a social institution, then conscientiousness is the scarcity principle operating in the institutionalized mind. The analysis must go back to Hume's doctrine that Scarcity is not only the source of the feelings of selfishness - it is also the source of the feelings of justice, property rights and conscience.

Analyzed more fully, with the aid of Darwin's scarcity, Peirce's pragmatism and Hohfeld's jurisprudence, Scarcity is the source of rights, duties, liberties and exposures. Rights are claims to something that is scarce or is expected to be scarce. If it were as abundant as fresh air one could take it without asking; if it is as scarce as radio wave-lengths one must

get authority to claim it exclusively for himself, by imposing the duty on others to keep off.

This is none else than Liberty, the absence of a duty of self to keep off from something that is scarce enough to tempt others to get on. The others are thereby exposed to whatever advantage or disadvantage that may be included within the scope of the permitted liberty: - advantage, perhaps, to be gained as a lessee, disadvantage by being compelled to pay for the lease or to go elsewhere or go out of business. Thus the four relations of legal rights, duties, liberties and exposures are four parts of the whole status of the individual as a participant or member of that concern we name the State, and the entire system arises out of the single principle of scarcity of wave-lengths. This is the scheme of objective oughts and ought nots - objective because they depend upon the expected activity of officials with authority and acting under the superior due process of law imposed by the common law, statute law and constitutional law. Subjective, also, because, from our knowledge of the way people act when placed in this status we infer that they have feelings somehow connected with those acts. The inference is based on what we know of our own feelings, else we could make no such inferences. We infer that there would be no conflict of interests and no feelings adequate to provoke conflict, if wave lengths were as abundant as other kinds of air.

Looking at it from the standpoint of a disinterested outsider, as Adam Smith proposed, we feel ourselves inclined to criticise the participants who "unduly" press their claims

to something that is so scarce that it will not go round for everybody and must be shared according to rules that must be and ought to be observed. Eventually all participants and prospective participants, when the confused situation becomes "impossible" so that nobody gains anything, agree that a superior authority, supposedly disinterested, or at least fair and reasonable, shall lay down the rules with sanctions, which rules are rights, duties, liberties, exposures. Then each participant has a certain status of security of expectations, which, however much it may place limits on his freedom, yet he feels, on the basis of experience, that he ought to obey them.

But rights and duties, as Macleod pointed out, are personal relations, and therefore separable from the abundance and scarcity of wave-lengths or other physical objects to which claims are made as matters of right and liberty. Consequently, the same principle of scarcity is one of the limiting factors in the ethical as well as the economic valuations of human beings. The ethical values may be summed up as their virtues of various kinds, the economic values as their wages, salaries or other compensation. A high valuation of virtues means a willingness to grant rights and liberties by reducing exposures and duties. In periods of violence the virtues centered around physical heroism, and conquerors obtained rights and liberties. In capitalistic times the virtues centered around thrift and business ability, and business men were granted rights and liberties. When the virtues of labor came to be appreciated,

slavery was abolished and labor was granted rights and liberties by reducing duties and exposures.

At the same time the principle of scarcity works. Too much virtue of a given kind is monotonous, meaning thereby that there is a diminishing validity of virtue, and the different virtues must be proportioned. The validity of virtues increases with their scarcity, and diminishes with their abundance. The restriction of immigration was not only a factor in raising wages, it was also a factor in inducing employers to promote industrial democracy and thereby extend to workers rights and liberties within their concerns not previously contemplated when labor was abundant. They then begin to ask, "What more than wages do you want", instead of saying, "Take it or leave it".

Likewise with the veracity of truth. There is a diminishing veracity of truth correlating with the diminishing importance of any one factor when it is too abundant and becomes complementary instead of limiting. Too much truth of one kind, such as too much truth about pain, desire, exchangeability, to the exclusion of other truths such as human values and virtues, becomes both monotonous and untruthful. The virtue of truth must be proportioned in proper quantities, according to different kinds of truth, in order to obtain the whole truth.

This, we take it, is the ethics of "common sense", an ethics that is "common" because characteristic of everybody, yet in the different degrees of Hume's "vividness"; and an ethics that is "sense" because felt by everybody in variable degrees of intensity, according, partly, to both the scarcity

of things and the scarcity of human virtues. As such, conscience is not an entity; it is varying degrees of conscientiousness arising from the principle of scarcity, and making up a part of that total Willingness which, while also subjective, yet shows itself in the behavior, first of conflict over things that are scarce, then of a provisional harmony in sharing them, then as amendments and readjustments of the sharings.

It is, therefore, not ultimate happiness that is the internal standard of what one ought to do relative to one's own rights, duties, liberties and exposures - it is the working rules dominating the behavior of officials and others that shall afford to all what are deemed to be a reasonable distribution of all their rights, duties, liberties and exposures, leaving to each the pursuit of his own happiness in his own way within those rules.

Likewise these working rules furnish the only understandable meaning of what the intuitionists mean by human perfection as the ultimate internal standard of ought or ought not. What is human perfection for you? Is it my idea of what your conduct ought to be? Is it your idea of what my conduct ought to be? We certainly do have these ideas of perfection for other people in all of our transactions with them, and similar ideas of our own perfection. But it is exactly for this reason of highly different ideas of perfection that conflicts arise. We do not want other people's ideas of perfection imposed upon us when that perfection is applied to our own performances, avoidances and forbearances,

any more than we want their ideas of happiness imposed upon our behavior. But if our conflicting ideas of perfection or happiness make our transactions impossible, or even if they make them difficult, then perforce we are compelled to appeal, as plaintiff and defendant, to the judicial mechanism which the concern has set up for its own continuity, to impose rules of perfection upon us and require us to obey.

The ultimate internal standard, then, for my ideas of ought and ought not, being neither universal happiness nor universal perfectibility, but being the rules of the various concerns in which we are participants and in subordination to which we work out our own ideas of happiness and perfection, the final question of a standard of ought and ought not is, What are the purposes common to all participants which ought to be established as working rules for them all, and what are the private purposes of participants that harmonize with or conflict with these public purposes? These, again, must be inferred from observation and history of behavior of participants, since purposes are wholly subjective. So when we speak of private and public purposes, although we cannot avoid bias because we are always speaking of ourselves in harmony or conflict with others, yet, subject to Peirec's rule that truth and reality are the consensus of opinion of those who investigate, and are competent and reasonable, we may state what seem to be the almost universal consensus respecting the real purposes, conflicting as they often are, yet capable of harmony, of all who participate in fashioning the working rules of all economic and political going concerns.

Prosperity is Foremost. Abundance, efficiency, production of wealth, was the starting point of modern economic theory at the hands of Adam Smith, yet it is debatable, whose prosperity? Security of expectations is next. Smith and Bentham placed it even above Prosperity. But, whose security? Liberty is next. It may be first, depending upon whose liberty is meant. Equality is last. It may be first. But how determine what is Equality? If ways are found to answer these questions in economic transactions and going concerns, then we have Reasonable Value.

CHAPTER XIII

Reasonableness

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REASONABLENESS

I. Society

The personification of society consists in analogies to individuals. Society receives an income. Society consumes and enjoys that income. The net income of society is the difference between sacrifices and enjoyments. But society never shed a tear nor ate an apple. Society is rhetoric for concerted action. Deprived of its rhetoric, society is a world-wide producing community and a world-wide pay community, composed of millions of smaller concerns, each and all of them retarding or enlarging the transactions of individuals who are their members or participants. Nations and political parties are concerted action for the regulation of violence. Economic concerns are concerted action for the regulation of economic power. A moral concern is one without violence or economic power. Only individuals work, wait, suffer, enjoy, and they do so as members and participants in many going concerns.

The personification of going concerns is concealed by starting with individuals instead of their transactions. Going concerns are expectations of regulated transactions between individuals. The absence of such expectations is anarchy. To avoid anarchy we personify concerted action. Society, humanity, patriotism, loyalty, good will, idealism, are personifications of concerted action. Reduced to reality they are appeals for subordination of individual action to concerted action. The science of economics cannot, indeed, be narrowed down to exclude these personifications. They make the world move. They are the humanity that is our subject-matter. But we can first eliminate them without prejudice, and then restore them to see the

thing move.

We are concerned here only with the economic activities. We eliminate, for the present, everything else. We begin with Irving Fisher's "Nature of Capital and Income," (1907) based, as it is, on a logical, mathematical and accountancy appraisal of preceding concepts, by means of which we can review the various historical concepts and reconstruct our own.

A corporation, with Fisher, is quite rightly a "fictitious person," composed of double-entry accounts between individuals. But a human body is also a system of double-entry accounts between man and nature. These credits and debits cancel out, so that there remains only individual psychology as a net income of satisfactions and dissatisfactions. This net income of all persons is society.

We conceive that the difficulty arises from the fact that there are four distinguishable fields of economic science, two of them dealing with man's interactions with nature, and two of them dealing with man's individual transactions and concerted action. They are inseparable but may first be separated for investigation and then brought together in their functional relations. Engineering economics and Consumption economics are the field of man's interactions with the forces of nature. Business economics is the field of proprietary transactions between individuals and concerns, while Political Economy is the science of the functional interaction of the others, in a unified concept of world economy.

Fisher merges the four into a variety of combinations. In his definition of "interaction" he includes production, ownership, transfer of ownership, and consumption. An interaction is "an event which is a service of one capital and at the same time a disservice of another."¹ But the reason why it can be called a service and equivalent

diservice is because the "capital" belongs to an "owner" and the owner has "desires." This is a union of engineering, proprietary and consumption economics in the terms capital, income and service. Thus a "carpenter and his tools," used in the process of repairing a house, perform a service, but, from the standpoint of the house "the repairs are disservices."¹ The two are equal and opposite and "they underlie what business men call 'double-entry bookkeeping.'²" Thus "an interaction is a service of the acting instrument, a disservice of the instrument acted upon. There can never arise the slightest doubt as to when it is to be regarded as positive and negative. The definitions of service and disservice settle this question in each case, by referring it to the desire of a human being, viz., the owner of the service or disservice."

If, however, instead of analogy to the double-entry bookkeeping of business economy, Fisher had adopted the engineer's concept of efficiency, he would have eliminated both ownership and desire, and would have used the terms "input and output" to mark off engineering from proprietary and consumption economics. From the engineers' professional standpoint, input and output have nothing to do with ownership or suffering or satisfaction. It is only when the engineer is commanded by an owner that he subordinates his technological profession to business or consumption. Professionally his only concern is the ratio between the input of nature's forces, whether human, physical or biological, and the output of finished or unfinished use-values of product. This is engineering economy, whose measure is efficiency, and has nothing to do in itself with wages, prices, ownership, services, desires, or humanity. It is merely the interaction of physical forces so planned and economised that the greatest output per

1 143.

2 104.

unit of time, or least input per unit of time, may be derived from nature's forces.

When it comes to the political point of view, an extension, a limitation and a behavioristic interpretation of this engineers' point of view are required. The extension includes the whole of society or the whole of a nation or even any separable group of concerted action. The limitation requires that the physical forces, which the engineer treats indifferently from the human forces, shall be separated from human forces of production, which we have concluded following Ricardo and Marx, are the work and time whose unit is the average man-hour. And the behavioristic interpretation is resolvable into the managerial transactions by which human beings are kept in their places throughout the productive process. The only discoverable double-entry is input and output.

Thus the economic significance of this engineering concept, on a world-wide social scale, resides in the fact that there is no social income whatever - there is only social output. It is the social organization, cooperation and management of human beings, where labor of all kinds is input, and products of all kinds are output. This is a social producing organization, a "going plant," and society, from this standpoint, is the world-wide groupings of concerted managerial transactions which convert the work of human beings into a world total of output. The same applies to the lesser concerns of nations, corporations, estates and farms.

Here the definition of capital is Technological Capital. Even the consumption goods needed to keep the population agoing are but a turn-over of an output of subsistence required to furnish human energy during the production process. This kind of capital, with its imputed labor input, yields only output, and not income. It has its measurable

dimensions of turnover, average period of production, etc., all reducible to uniform measurement in terms of output per man-hour. Mathematically it is efficiency - not ownership, prices, wages, scarcity, happiness or misery - not credit and debt, not outgo and income, but input and output.

When it comes to the bargaining transactions of Business Economy instead of the managerial transactions of engineering, then this social output is converted into proprietary income and proprietary outgo. Here prices, wages, ownership, transactions, become, not input and output of Technological Capital, but income and outgo of Proprietary Capital. Instead of the input and output of engineering, we have the outgo and income, the debits and credits, the double-entry book-keeping of legal control, which then becomes, quite clearly distinguished, the legal assets and liabilities of the business concern, quite different in character, magnitude and variability from the technological capital. The technological capital does not disappear, it becomes a functional part of the Business Capital of ownership, credit and debt. Neither do the technological input and output disappear; they become private property, bought and sold, and therefore the outgo and income of assets and liabilities. It is just because the business capital of legal control converts the social capital of output into bargaining transactions of income and outgo, that the contradiction arises between proprietary economy and political economy.

Fisher classifies these productive interactions of input and output as "transformation" and "transportation." Transformation is practically identical with "production" or "production process," and consists in "changes of relative position of the parts" of technological wealth, while transportation is a change in the place of wealth. Bookbinding is a transformation or production of wealth; it assembles

the paper, leather, thread and paste into a whole book. Delivering books to a library is transportation. . . The distinction between transformation and transportation is thus merely one of convenience. . . . The same principle of equal and opposite services applies to both. When merchandise is changed from one warehouse to another, the first warehouse is credited with the change and the second is debited. The warehouse which has rendered up the merchandise has done a service; that which has received it has done a disservice."¹

This is an "interaction" of which the import is double-entry bookkeeping. But such double-entry is only a metaphor for the engineering economics of input and output. It shifts to business economics when legal control of the warehouses and merchandise is in question.² To this business "interaction," which is "a change in ownership of wealth," Fisher gives the name "transfer." And since transfers usually occur in pairs the double transfer is an exchange. The purpose here is similar to the purpose implied in the meaning of the other interactions, namely that a mere transfer of ownership "does not duplicate income, but merely shuffles it about. It may and does put services of wealth where they are most needed, and thus results in a more effective use of income, just as credit and other forms of the divided ownership of wealth may make a more effective ownership of capital. . . . But this must not stand in the way of our cancelling the values of assets and liabilities or of services and disservices."³ "When a bookseller sells a book he credits his stock with the fact that it has brought in money, and the customer debits his library to the same amount."⁴ There may be an increase in

¹ 149.

² Disregarding accounts between different funds under the same ownership.

³ 149n.

⁴ 149.

"total utility" for each individual, but there is no increase in "marginal utilities," which, in this case, is the price of the book. That price cancels out - the bookseller's assets change from the value of the book to the equal amount of money, and the customer's assets change from money to the equal value of the book. There is in this transaction no additional increase to society. "The effect of cancelling these items - the credit item of the seller and the debit item of the purchaser - is to free the income account of that article from all entanglements with exchange, to wipe out all money income, and to leave exposed to view what we have called the natural income of the article. . . . The fact of bookselling adds nothing to the income of society, but the reading of the book does."¹

Thus the proprietary income and outgo of business transactions cancel each other. They are relations of man to man. There remain only the natural income which is the psychological interaction between the consumer and the forces of nature focused in the book. This should be named Consumption Economics. The book is a part of his library. The library is a part of all his durable and transient consumption goods. Their uses must be proportioned according to his personality. Thus consumption economics is mainly home economics.

Fisher points out the progress which economic theory has made since the time of Adam Smith. His analysis reveals that Smith was a proprietary business economist, not either an engineering or a consumption economist. "Adam Smith," says Fisher, "regarded a rented house as bearing income in the form of rent, but a house occupied by the owner as bearing no income at all. The truth is nearly the reverse. Both houses yield income, and both incomes are of the same

kind, viz., shelter. The rent of the rented house is, for society, not income at all. It is income to the landlord but outgo to the tenant - outgo which he is willing to suffer solely because of the shelter he receives. The shelter alone remains as the income from the house after the rent transaction is cancelled out between the two parties concerned. The shelter income is the abiding item, and without it there could be no rent-income to the landlord.¹"

Here we can see the four fields of economics. The world-wide social organization of engineering produced the house and all its contents. Shelter is an item of this total coordinated output from all parts of the world. The proprietary organization of society created the pay community of credit, debt, ownership, contract, payment, proprietary outgo, proprietary income, and business economics. The individual who occupied the house determined for himself, within the limits set by his acquisition of ownership, what proportion shelter should bear to his total wants and consumption resources. The three, of course, are inseparable in the whole science of Political Economy. But there is a difference between mixing them and analyzing them. By mixing them, metaphors are needed. By analyzing them, each has its own field and terminology. Engineering has its field of input and output; business its field of income and outgo; consumption its field of life and death; political economy its field of the entire world-wide correlation of technology, business and consumption.

The reasons why business economics should be separated out and dealt with in its own proper field are primarily on account of its dominance over all other economies. For rights of property are not only the formerly conceived legal dominion over a physical object,

1 Ibid., 150, 151.

but are all of the transactions between individuals regulated by all of these concerted actions which we name society. Property is not only, as it was historically, "corporeal," the right to hold things exclusively for self, and therefore to dictate to laborers and others the terms on which the thing may be used; also it is incorporeal property, the right to have payment for outgo of commodities and services, or to have commodities and services for payments; and it is intangible property, the right to participate or refuse to participate in transactions with any or all people by withholding what they need but do not own and furnishing what they need if they will pay for it.

Based on these rights of property, every physical thing is owned by somebody either individually or in concert. People do not deal with physical nature, either as producers or consumers, until they have first come to terms with the owners of physical nature. Hence all opportunities are social opportunities, and not natural opportunities. They depend on willingness to buy or sell - that intangible property of withholding what others need but do not own. Laborers do not have access to nature for the "transformation" of nature's forces - they get consent of owners by obeying the mandates of owners. Competition takes place, not where goods are physically transported, but where titles are transferred and payments are made.

Thus society is not only a managerial community of input and output under the direction of proprietors, it is also a pay community of income equal to debt and outgo equal to credit, as may be agreed upon between proprietors. The repetition, multiplication and magnitude of these agreements constitute a bargaining community of withholding what others need and acquiring what others are willing to yield. But, since these proprietary transactions are not left to

anarchy, society is all the expected concerted action that keeps them more or less orderly.

Hence, if we do not personify society or mix it with engineering, business, or consumption, we need a set of terms that will fit its type of activity and will exclude, but not be inconsistent with, the other types of activity with which it is functionally connected. In the first place, society, except as metaphor, does not receive an income, for society is not a sum of individuals, it is the concerted transactions of individuals. Society yields only output for it is the concerted transformations and transportation of the materials of nature. Only individuals receive income, and they do so in the two meanings of a proprietary share of the total output and in the individualist meaning of the satisfactions yielded from that share.

The only meaning of social income is the sum total of individual shares of the social output, or the sum total of life and death of individuals. But these are merely an addition of individuals - a population, not a society. They are all personal and private incomes.

Here is the proprietary aspect of concerns. It is social concerted action that provides changeable forms of action whereby individuals acquire and enjoy, as income, variable shares of the social output. These are the property-rights above mentioned. Thus social action provides both concerted output and concerted rules for acquiring it by individuals. The terminology fitted to this unpersonified society is a world-wide going concern of production and distribution, composed of such other concerns as nations, parties, corporations, and associations of all kinds.

So with the term transaction when fitted to the private acts within this social process. It must be fitted to the two types of relations between individuals - those of superiors and inferiors which

CHAPTER I. THE DISCOVERY OF AMERICA

IN THE YEAR 1492, CHRISTOPHER COLUMBUS, AN ITALIAN, WAS SENT BY THE KING OF SPAIN TO DISCOVER A WESTERN PASSAGE TO THE INDIES.

HE SAILLED FROM PALERMO, IN SICILY, ON THE 3RD OF SEPTEMBER, AND AFTER A LONG AND DANGEROUS VOYAGE, HE DISCOVERED THE ISLAND OF CUBA ON THE 12TH OF OCTOBER.

HE THEN SAILLED ON TO THE MAINLAND, AND DISCOVERED THE RIVER OF ORINOCO, WHICH HE TOOK FOR THE GULF OF VENICE.

HE RETURNED TO SPAIN IN THE YEAR 1493, AND BROUGHT WITH HIM SEVERAL INDIANS, WHO HE BROUGHT TO THE KING OF SPAIN.

THE KING OF SPAIN WAS SO IMPRESSED WITH THE ACCOUNTS OF COLUMBUS, THAT HE DECIDED TO SEND HIM ON A SECOND VOYAGE.

HE SAILLED FROM SPAIN ON THE 3RD OF SEPTEMBER, 1493, AND AFTER A LONG VOYAGE, HE REACHED THE ISLAND OF CUBA ON THE 11TH OF OCTOBER.

HE THEN SAILLED ON TO THE MAINLAND, AND DISCOVERED THE RIVER OF ORINOCO, WHICH HE TOOK FOR THE GULF OF VENICE.

HE RETURNED TO SPAIN IN THE YEAR 1494, AND BROUGHT WITH HIM SEVERAL INDIANS, WHO HE BROUGHT TO THE KING OF SPAIN.

THE KING OF SPAIN WAS SO IMPRESSED WITH THE ACCOUNTS OF COLUMBUS, THAT HE DECIDED TO SEND HIM ON A THIRD VOYAGE.

HE SAILLED FROM SPAIN ON THE 3RD OF SEPTEMBER, 1494, AND AFTER A LONG VOYAGE, HE REACHED THE ISLAND OF CUBA ON THE 11TH OF OCTOBER.

HE THEN SAILLED ON TO THE MAINLAND, AND DISCOVERED THE RIVER OF ORINOCO, WHICH HE TOOK FOR THE GULF OF VENICE.

HE RETURNED TO SPAIN IN THE YEAR 1495, AND BROUGHT WITH HIM SEVERAL INDIANS, WHO HE BROUGHT TO THE KING OF SPAIN.

THE KING OF SPAIN WAS SO IMPRESSED WITH THE ACCOUNTS OF COLUMBUS, THAT HE DECIDED TO SEND HIM ON A FOURTH VOYAGE.

HE SAILLED FROM SPAIN ON THE 3RD OF SEPTEMBER, 1495, AND AFTER A LONG VOYAGE, HE REACHED THE ISLAND OF CUBA ON THE 11TH OF OCTOBER.

HE THEN SAILLED ON TO THE MAINLAND, AND DISCOVERED THE RIVER OF ORINOCO, WHICH HE TOOK FOR THE GULF OF VENICE.

HE RETURNED TO SPAIN IN THE YEAR 1496, AND BROUGHT WITH HIM SEVERAL INDIANS, WHO HE BROUGHT TO THE KING OF SPAIN.

THE KING OF SPAIN WAS SO IMPRESSED WITH THE ACCOUNTS OF COLUMBUS, THAT HE DECIDED TO SEND HIM ON A FIFTH VOYAGE.

HE SAILLED FROM SPAIN ON THE 3RD OF SEPTEMBER, 1496, AND AFTER A LONG VOYAGE, HE REACHED THE ISLAND OF CUBA ON THE 11TH OF OCTOBER.

HE THEN SAILLED ON TO THE MAINLAND, AND DISCOVERED THE RIVER OF ORINOCO, WHICH HE TOOK FOR THE GULF OF VENICE.

HE RETURNED TO SPAIN IN THE YEAR 1497, AND BROUGHT WITH HIM SEVERAL INDIANS, WHO HE BROUGHT TO THE KING OF SPAIN.

THE KING OF SPAIN WAS SO IMPRESSED WITH THE ACCOUNTS OF COLUMBUS, THAT HE DECIDED TO SEND HIM ON A SIXTH VOYAGE.

HE SAILLED FROM SPAIN ON THE 3RD OF SEPTEMBER, 1497, AND AFTER A LONG VOYAGE, HE REACHED THE ISLAND OF CUBA ON THE 11TH OF OCTOBER.

are managerial transactions, and those of presumable equals which are bargaining transactions. But these differ materially. Only two persons enter a managerial transaction, but four persons enter a bargaining transaction. For bargaining transactions, in the process of negotiation, are always limited by the existing alternative opportunities, the existing competition and the relative power to fix the price. In the case of disputes a fifth party enters, representing the concerted action of all who have an effective voice in determining the limits of opportunity, competition, and price.

Hence the terms wealth, goods, transactions, exchange, and so on, must be defined so as to fit this social process, yet not to overlap the engineering and consumption processes. Fisher says, in accordance with the legal doctrine of assumpsit and the usual definition in economics, that "an exchange is a mutual and voluntary transfer of goods (wealth, property, or services) between two owners, each transfer being in consideration of the other."¹ So defined, the exchange is, in fact, not a mutual transfer of wealth or of services, it is a mutual transfer of ownership of the wealth, or services, or of the terms of payment. Thus the economic term "goods" and their exchange has three meanings: - wealth, services and rights of ownership. The only one of the three that is assignable or negotiable at law is rights of ownership, and it is to these that the doctrine of assumpsit applies. If exchange, then, is to include wealth and services, the meaning of exchange is changed from the proprietary meaning to a physical meaning, which is none other than the physical transportation in the case of wealth, and the physical transformation or transportation in the case of services. These meanings of exchange are possible but they are really personifications of a physical process. The proper

terms for the physical process are input of labor and output of wealth, while the human process is the mutual intention of making the other person the lawful owner of the wealth or service. The physical process is a technological process, but the proprietary process is the concerted action of the pay community in executing the will of each owner by transferring the rights of ownership.

But the terms transfer, wealth, and service need similar analysis. Fisher defines a transfer as "an interaction which is a change in ownership." It is analogous to the interaction of transformation and transportation, that is, analogous to production of wealth.

But no individual "changes the ownership of wealth." He merely indicates by his actions a will to change the ownership. Then if he has legal "power" or "capacity" to change the legal relation, it is because he is a recognized citizen, and therefore the concerted action of the community, through the rules of law and interpretations of courts, follows his indication of will, and transfers the ownership. All that the individual does is a physical act or sign. The state, in its discretion, transfers the right of ownership. It is perhaps allowable to draw an analogy between the input and output of production of wealth and the outgo and income of the transfer of wealth. But it is only a metaphor. And they should not be confused but should be kept distinct from the transfer and acquisition of titles by the state which gives to individuals legal control over input, output, outgo and income. This is proprietary or business economics, with its

1 Ibid., 145-150, 336.

income and outgo of ownership as regulated by the concerted action of government.

Here, again, the several meanings of wealth itself require discrimination. It has two proprietary meanings arising from two rights of property, holding and withholding; two technological meanings of input and output, and two psychological meanings, happiness and misery. Each is proper enough in its place. The first is proprietary or social economics; the second is the economics of engineering and consumption; the third is psychological economics. Each are wealth, but each is a view of the same thing from standpoints different from the other two.

Fisher, following the prevailing usage among economists, defined wealth as "material objects owned by human beings." This, we see, is a mixture of two independent variables, technology and property. Technology changes with command over the forces of nature. Property changes with the growth of institutions and command over the services of other persons.

"According to this definition," he goes on, "an object to be wealth, must conform to only two conditions: It must be material and it must be owned." Thus Fisher identifies property with what we have found to be the meaning of corporeal property. But, here, again, as MacLeod pointed out, the term "property" has the double meaning of physical thing and ownership of the thing. The "thing" belongs to engineering economics, the ownership to business and political economy.

"Some writers," says Fisher, "add a third condition, namely that it must be useful. But while utility is undoubtedly an essential attribute of wealth, it is not a distinctive one, being implied in the attribute of appropriation; hence it is redundant in a definition.

Other writers, like Cannan, while specifying that an object, to be wealth, must be useful, do not specify that it must be owned. They, therefore, define wealth as 'useful material objects.' This definition, however, includes too much. Rain, wind, clouds, the gulf stream, the heavenly bodies - especially the sun, from which we derive most of our light, heat and energy - are all useful but are not appropriated, and so are not wealth as commonly understood."¹

Here are the two meanings of value, the technological use-value and the proprietary scarcity value. The basis of property is scarcity, as Hume pointed out. If a thing is expected to be so abundant that everybody can get it without asking consent of anybody else or of government, it becomes the property of nobody. If limited in supply it becomes private or public property. The gulf stream, though limited, is made free for all by international agreement. One nation might own it if its navy drove all other navies from the oceans. Hence proprietary economics is the world-wide economics of scarcity. Of course, objects must have use-value, but that belongs to the technological economics of engineering and the physical sciences. If useful things are not scarce they will not be produced and there will be no labor input and labor output. Also, if not scarce they will not be owned, privately or publicly. But these are the functional relations between three variables, technology, consumption and property, each of which has its own field. Economic theory cannot disregard them, but, instead of mixing them by double and treble meanings of words, it should separate them and then correlate them.

The same treble meaning applies to wealth. Wealth is not merely useful material objects that are owned, but wealth is a variable of physical use value, economic scarcity value and the laws of proper-

¹ Ibid., 3.

ty rights. In the first aspect it is output of the world-wide organization of production. In the second it is sufficiently scarce for nations, individuals and concerns to struggle to obtain its ownership. In the third aspect, rights of property are laid down by the social organizations in order to regulate this struggle.

Fisher rightly criticises other writers who "insist that an article, to be wealth, must be "exchangeable," since this would exclude parks, Houses of Parliament, and much other trustee'd wealth. "Although it is essential that wealth should be owned, it is not essential that it should continuously change owners." Of course, the reason why wealth is owned is because it is scarce. The first essential is scarcity; the concerted actions of society bring about the rules of ownership.

"Again," says Fisher, "many writers, like MacLeod, omit the qualifier 'material' altogether, in order to make room for the inclusion of such 'immaterial wealth' as stocks, bonds, and other property rights, and for human and other services. Property and services are, it is true, inseparable from wealth, and wealth from them, but they are not wealth. To embrace these under one term involves a species of triple counting. A railway, a railway share, and a railway trip are not three separate items of wealth; they are respectively wealth, a title to that wealth, and a service of that wealth."¹ Thus Fisher, of course, recognizes the distinction which we point out. Our only question is the methodology of investigation.

We have already seen that MacLeod was endeavoring to substitute proprietary economics for the technological economics of the classical economists, but that all of his defects are resolvable into the one defect of a misconception of Time. He failed to distinguish a point

¹ Ibid., 40.

of time from a flow of time or a lapse between two points of time, and therefore failed to distinguish the past from the future and physical things from the expectations of future physical things, and thus confused engineering economics and proprietary economics. These failures involved at least double counting, perhaps triple counting. For the meaning of property is the threefold meaning of usefulness, scarcity and futurity. Applying these distinctions, the railway is technological output of preceding labor of which the railway trip is the technological output of operating labor, and the railway share is a share in the proprietary expectation of the future net money income derived partly from those who will pay for the trips.

Here, then, Fisher has given to the word wealth a treble meaning, the output of use-value from the past, the scarcity of that output, and the proprietary income from that wealth. And to the word service is given the double meaning of output and money income, while to the "title" is given the double meaning of MacLeod's corporeal property and that expectation of future prices which is the modern intangible property.

The significance of these meanings will appear in Fisher's criticism of those economists who, like Tuttle, "have endeavored to break away from concrete objects entirely. The term wealth, they maintain, applies, not to concrete objects, but to the value of these objects. Much may be said in support of this contention. But as the question is chiefly verbal, that is, not a question of finding a suitable concept, but of finding a suitable word for a concept, it does not seem advisable to depart from the prevailing usage among economists."¹

The question would, indeed, be only verbal were it not for the

¹ Ibid., 4.

two aspects of property - income and futurity - which distinguish that concept from the others. Technology simply yields output regardless of who owns or enjoys it. Rights of property convert it into expected income. This is not a verbal difference. It is the difference between output and income, between the present and the future, and between technological capital which augments output, and proprietary capital which acquires ownership of it and limits its supply. If the output of wealth is already defined to include income from that wealth, then, of course it is double counting to count also the property rights on which that output becomes income. But it becomes double counting only because it had previously become double meaning.

And when "value" does not include futurity as one of its variables, then the question is only verbal as to whether we shall call the object wealth or shall call it the value of the wealth. Its value is two-fold, use value and scarcity, but property adds the third variable, futurity. Property means the lawful expectations of use-value and scarcity-value. Consequently Value is "immaterial," "intangible," simply because it is not visible or tangible in the material object, but it is the expectations which are entertained regarding the future uses and their future scarcity which may be derived from present ownership of that material object. Hence all property value is immaterial, not because it is imaginary or non-existent, or intangible, but because it has the only real security for the future which human beings can count upon, the stability of social institutions. Hence, in proprietary economics, it is truly the value of objects and not the concrete objects themselves, that are wealth. Tuttle and the others would have been right only if they had included in this meaning of value the property rights and the concerted action of society which affords stability of expectation of future concrete objects and their uses, to

be delivered by the producing organization of society. Otherwise their idea of value was only a verbal difference from those who made wealth consist of concrete materials.

The working out of engineering economics is illustrated by Fisher, but under the concept of income and ownership rather than output and input. He says, "Various classes of wealth may be distinguished. Wealth which consists of the earth's surface is called land; any fixed structures upon it, land improvements; and the two together, constituting immovable wealth, real estate. All wealth which is movable (except man himself) we shall call commodities. A third group includes human beings - not only slaves who are owned by other human beings, but also freemen who are their own masters."

This classification of human beings as wealth to the extent of their labor power, had matters of ownership, liberty and income been excluded, would have been quite accurately the engineer's concept of wealth as the output derived from the input of nature's forces, including human nature. When engineers write or philosophize on economics this is the way they do it.¹ Fisher cites also a large number of economists who have "included man in the category of wealth," namely Davenant, Petty, Cunard, Say, McCulloch, Roscher, Willstern, Walras, Engel, Weiss, Dargun, Ofner, Nicholson and Pareto. Others might have been added, such as Ricardo and Karl Marx. Indeed it was Marx who gave to this engineering economics its classic conclusion. It is a quite legitimate and necessary part of a completely functional political economy, for it is the concept of productivity and efficiency, regardless of property rights or feelings. The difficulty was that they had not clearly recognized the need of distinguishing the three

¹ Adkins, Ingalls, Taylor.

subordinate fields of political economy - efficiency, property and scarcity - and had not the advantage of the engineering terms input and output which would have made the distinction clear. Taking society as a whole, but omitting property and income, this is the social organization of production, whose behavioristic language is the managerial transactions of command and obedience; whose economics is efficiency and whose human beings are power machines.

Fisher recognizes this paradox, but his apology would not have been needed had he perceived that he was talking two languages at once, engineering and business. The field of engineering needs no apology except when it sets up for business economy or political economy. He says, "It is true that freemen are not ordinarily counted as wealth; and, indeed, they are a very peculiar form of wealth, for various reasons: first, because they are not, like ordinary wealth, bought and sold; secondly, because the owner usually estimates his own importance so much more highly than any one else; and finally, because the owner and the thing owned in this case coincide."

This apology to human beings is unnecessary if engineering economy is intended. It is necessary if business is identified with engineering. Thus he goes on: Human beings are, like other wealth, "material" and "owned." "These attributes, and others which depend upon them, justify the inclusion of man as wealth. But in order to concede as much as possible to popular usage, the following supplementary definition is framed: By wealth (in its more restricted sense) we mean material objects owned by man and external to the owner. This definition obviously includes slaves, but not freemen. But it is more difficult of application than the wider definition first given, as it requires us to separate into arbitrary classes those persons who

are intermediate between freemen and slaves, such as vassals, indentured servants, long-time apprentices, and negroes held in peonage. . . . Most workers in modern society are 'hired', i. e. bound by contract to some extent and for some period of time, even though it be for no more than an hour, and to that extent are not free. In short, there are many degrees of freedom and many degrees of slavery, with no fixed line of demarcation.¹"

These refinements would have been unnecessary if it had been recognized that the engineers' concept of wealth excludes all reference to the political economy, which is the historical and institutional economy of the evolutions of rights, duties, liberties and exposures. The engineers' concept of wealth is quite the correct concept of wealth from the social point of view. For it is merely the physical output of use-values, no matter whether they are wanted or not; no matter whether they are oversupplied and thus their scarcity-value is so diminished that nobody cares to own them; and no matter who it is that obtains the rights of ownership and income. In short, the greater the efficiency of the social organization the greater is the production of wealth, although from the private standpoint of ownership, of income and of wants, the less is their proprietary or scarcity value.

With this double meaning of wealth, the social engineering meaning without ownership, and Fisher's business meaning of private ownership, we are confronted by the very situation that reveals the conflict between business economics and political economy. It is the double meaning of the word "service." Fisher describes service as the income derived from capital or wealth. "An instrument renders a service when, by its means, a desirable event is promoted or an undesirable

¹ Ibid., 6.

event prevented." ¹ Thus, "A paper manufacturer," he says, "is offered a round sum" by his competitors "if he would close his mills." This he did, and "the contract which he made with his rivals constituted a kind of property for them: the wealth by means of which his promise was made good was evidently his own person together with his plant; and the service performed was the inactivity of both." ² Thus a paper mill yields the "services of wealth" when it is making paper and when it is not making paper. A bricklayer performs a service when he lays brick and when he is out on a strike. Running a loom is a service and shutting it down is a service. Restricting output is a service and increasing output is a service. ³

It is plainly the confusion of output with income. Output is a service rendered to other people; income is their share and his own share of that output derived by aid of the rights of property, one of which is the right to withhold service from others in the proprietary process of bargaining until the others will pay a satisfactory price. Income is proprietary wealth, output is commonwealth. Restricting output is not a service - it is bargaining power.

When wealth, capital, income, service, are defined with these double meanings, no social program can be built upon the definitions. They are a confusion of production with ownership, of output with restriction of output, of engineering economy with business economy, of efficiency with scarcity, of private income with social output. Fisher, however, builds upon these definitions a proposed public policy than an income tax should not include savings as income, but should be a tax only on that part of income which is spent for enjoyment.

¹ Ibid., 19, 336.

² Ibid., 28.

³ Cf. Commons, "Political Economy and Business Economy: Comments on Fisher's Capital and Income," Quar. Jour. of Economics, Nov. 1907, p. 120.

The latter only is income, the former is capital, and should therefore not be taxed as income.¹ Hence, income taxes should be levied only on consumption, not on capital. Otherwise it is a capital levy and not an income tax. Before we can properly estimate such proposals we need to examine further the way in which income is obtained as a share of the total social output.

II. Bargaining Power²

Bargaining power does not emerge as a distinct subject for economic theory until legal support is furnished for concerted economic action. The two principal methods of concerted action are the corporate and regulative. In the corporate form the individuals authorize a board of directors and a manager to make the bargains which legally bind the shareholders. Individual bargaining is eliminated. But in the regulative method the participants, whether individuals or corporations, yield to the rules, laws, or regulations which determine limits upon their individual or corporate bargaining power. Individual bargaining continues, but is limited.

The presuppositions of the individualistic, communistic and anarchistic economists did not include these presuppositions of bargaining power. Adam Smith, in basing his economic theory on the legal rights of the individual to liberty, equality and property, strongly opposed both forms of concerted action. He set up, as against concerted action, an impersonal, quasi-mechanical competition which controlled individuals in their bargaining (cp. Knight, F. H., Modern

¹ Ibid., 250 passim. Also, 3 Die Weltwirtschaftstheorie der Gegenwart 22 (1927) Translation privately printed.

² From article in Encyclopaedia of the Social Sciences.

Capitalism, Jour. of Econ. and Business History, Nov. 1928). The "corporations" which he so vigorously criticised, were of the regulative kind - the guilds which imposed limits upon the individual bargains of its members. So also were the tariffs, bounties, and trade privileges of mercantilism granted by governments to individuals or classes. They increased the individual or concerted domestic bargaining power of citizens by lifting the favored individuals above the menace of foreign competition. This individualistic and mechanistic presupposition of Smith dominated the classical and psychological economists. It was carried to the extreme by the anarchists. It was abolished entirely by the communistic economists whose presupposition eliminated both individual and concerted bargaining by substituting rationing, the exact opposite of bargaining.

As long as these individualist, anarchist, and communist doctrines prevailed, there could be no scientific theory of that intermediate process between the individual and society which is the concerted bargaining power of individuals. All such action was denounced as monopolistic by the individualists and anarchists, or as mere palliatives by the communists. But meanwhile, in the decade of the 1850's, both in England and America, unforeseen by Smith, Marx or Proudhon, and unseen by later economists and courts, a new legal right was recognized by the legislatures, the universal right of association, additional to the rights of liberty, equality and property. Corporations were not prohibited, as Adam Smith and the anti-monopolists demanded, but were universalized by general corporation laws, instead of the preceding special acts of legislatures. At the same period labor organizations, revivals of the guilds, abandoned their ideas of cooperative production or socialism, and adopted the ideas of concerted bargaining.

The foregoing right to incorporate was made the equal right of all who chose to incorporate, not because this device would increase their bargaining power, but because it would increase their productive power by attracting capital with the promise of limited liability. And unions were suffered to exist, until, twenty or thirty years later, it was found that they had thereby acquired new bargaining power. About the same time it was discovered that the corporations also, by concerted action, had acquired similar access of bargaining power. Thus we reach, at the end of the nineteenth century in America, the period of anti-trust laws applied to both corporations and unions.

After a period of vigorous prosecutions under these laws, the courts finally discovered that, in the effort drastically to abolish these schemes of concerted action, they were striking at the very base of property and liberty, the right to withhold from others what they need but do not own. Hence, in 1911, the words "reasonable restraint of trade" were introduced into the decisions, repeating a similar change during the seventeenth century in the common law, in order, in this case, (Standard Oil dissolution suit) to preserve the rights of stockholders notwithstanding the abuses perpetrated by managers. Then when, in 1919, upon this rebirth of the idea of reasonableness, it was found, in the Dissolution Suit against the United States Steel Corporation, that that corporation had practiced only reasonable restraint of trade, the recognition of bargaining power was attained in law.

This recognition came to a more specific determination in the price maintenance cases where it was found that, if the prohibition of price maintenance were carried to its effective limit, the corporation must be compelled to deliver its commodities to any buyer who might come along, and this would involve price-fixing by government.

This had been done in the case of public utilities. When rates were fixed by law compulsory service was also ordered. But in the price maintenance cases the right to withhold was limited by restricting it to reasonable restraint of trade. Similar discovery had previously been made in the case of laborers. It had been found that to prohibit laborers, by decrees of specific performance, from withholding their services even though they had contracted to work, was a denial of the personal liberty guaranteed under the Thirteenth Amendment to the Constitution. Business enterprises might, without such violation of the Constitution, be compelled to specific performance if they had made contracts to deliver commodities. But they could not lawfully, except as public utilities, be compelled to make such contracts. Thus with the legal power to withhold commodities and services finally recognized in law, reasonable restraint of trade, according to the court's ideas of reasonableness but contrary to the anti-trust laws, came to have a standing in law, and its equivalent bargaining power a standing in economics. For restraint of trade is bargaining power, and reasonable restraint of trade is reasonable bargaining power.

During this transition period of the past twenty years, distinguished as the period of admitting the process of reasonable bargaining power into the domain of law and economics, the process itself has obtained popular appeal under such names as stabilization of industry, stabilization of prices, orderly marketing, stabilization of employment or production. Such stabilization appeals to the wish for restraint against unlimited individual bargaining. The connotations of the terms stabilization and orderly marketing are similar to the connotations which, in labor economics, were formerly known as "equalization of bargaining power over the competitive area." The purpose, in this instance, was to prevent the individual bargaining

of competing employers and workers from reducing wages and increasing hours of labor to the disadvantage of their competitors who paid higher wages or worked less hours per day. Indeed, in this instance, it is the bargaining transactions, individual or collective, which set the rules and regulations for those managerial transactions which have become the special subject-matter of the new discipline, "scientific management."

Extended to the business community, under such names as business ethics, it is the purpose, by means of this newly permitted bargaining power, to prevent that individual bargaining of competitors which steals customers by cutting prices, or steals labor by raising wages. It is now coming to be believed, as was not contemplated by the early economists, that both the purchasing power of the public and the supply of labor power are limited, and therefore, instead of competing by individual bargains in order to pull customers or laborers away from competitors by lower prices or higher wages, the new ethical doctrine of "live-and-let-live" indicates that the proper procedure is to get only a reasonable share of that limited purchasing power or limited labor power, and this cannot be done without stabilization and its reasonable restraint of trade. The clear road for this theory of reasonable bargaining power was prepared by the decisions in the Steel Dissolution and the price maintenance cases.

Hence the practical theories of today are not the older theories of individual competition, individual property, the liberty of individual bargaining, the mechanism of free competition, nor even the communist theories of prohibition of bargaining, but are the theories of reasonable bargaining power. These come before economists and courts under the four groupings of discrimination, or unequal opportunity for individual bargaining; fair competition instead of free

competition; reasonable price instead of normal or natural competitive price; and equal or unequal treatment of different kinds of bargaining power.

A sketch of the historical spread of this doctrine of reasonable bargaining power would involve analogies and citations of cases on each of these economic aspects of reasonableness. But it is enough to notice its historical spread by classification of the various kinds of bargaining power. Labor organizations were the first to move towards this later doctrine of reasonable bargaining power, because they were the first to feel the pinch of the limited number of jobs and of the resulting discriminations and destructive competition. Railways and other public utilities next were forced by law to come under the doctrine, because the supply of their services was evidently limited and their huge corporate form enabled them to set their own rules for the individual bargains of shippers and passengers. Manufacturing industries next came within the theory, the issue in their case culminating in the cases above cited. Then the most comprehensive of all industries, the banking industry, was admitted to the process, under the Federal Reserve Act which authorized concerted action of ten banks in regulating the prices to be charged, and the volume to be issued, of bank credit. Finally, the farmers, by enlarging the meaning of cooperation from cooperative production to cooperative marketing, are in the struggling process of obtaining a larger share of the world's purchasing power by their own concerted bargaining power.

In all of these cases may be seen, in varying degree, an historical shift from concerted action in order to increase the production of wealth, highly favored by the economists and courts, to concerted action in order to restrict the production of wealth, highly disfavored. For, it is the shift from producing power to bargaining

power, which, when authorized by law, becomes reasonable restraint of trade. We have noted this shift in the case of corporations and labor unions. The similar process was also noted in the change of meaning, above referred to, of farmers' cooperation from improvement of scientific agriculture to improvement of bargaining power. The Federal Reserve System was created in 1913 for the "accommodation of business and commerce," but, in 1922, it shifted to restrictions upon the free granting of credit in the private transactions of member banks, which freedom had proven disastrous in 1919-1921.

We also have noted that the historical shift to bargaining power has occurred, not only towards the corporate form of consolidations, mergers and holding companies, but even more towards the regulative form of fixing maximum or minimum standards for the individual and corporate bargains of buying, selling, lending, hiring and excluding competition. Looked at in this way, the first break from the classical economic doctrine of free trade was in the protective tariff of 1842 which increased the domestic bargaining power of manufacturers. Consistently with this, but eighty years afterwards, was the restriction of immigration which markedly increased the bargaining power of unorganized labor.

In these cases it was positive governmental action. In other cases, as in the Federal Reserve System, or the stabilization policies of competitive industries, or the collective bargaining of farmers' coöperatives and trade unions, it was the negative governmental action of permitting that to be done, by means of bargaining power, which was deemed to be reasonable or indifferent, but positively restraining that which was deemed to be unreasonable or injurious to the public. In the former case, of governmental permission, there remained for the effectiveness of concerted action only such economic

sanctions as loss of profit, exclusion from markets, loss of employment, etc., which might be brought to bear upon those recalcitrants who attempted to break away and act independently. Permission to impose these economic sanctions was granted in the Federal Trade Commission Act by the proviso that it should not be deemed unlawful to "meet competition." Acting under this permission to meet competition, or even to threaten to meet it, the independent action of a competitor was likely to become even more destructive to self economically than obedience to the practices and prices observed by the others. According to this proviso it is not unreasonable restraint of trade for all the smaller competitors to "follow your leader," who obtains leadership through prestige or through economic power to cut prices below the level at which the small competitor can live. Thus the economic coercive sanctions of bargaining power become increasingly effective, even without resorting to the corporate form, but merely by resorting to the stabilization form.

Other practices, incidental to strengthening their bargaining power, are the new and more exact methods of statistical forecasting, by means of which individuals may more promptly withhold or expand production in concert with their competitors. The wide general acceptance of the principle of bargaining power is seen in the disappearance of nearly all resistance to high protective tariffs, and the substitution of universal log-rolling whereby farmers concede high protection to the bargaining power of manufacturers in exchange for high protection of the farmers' bargaining power. Likewise the conservation of natural resources takes on new and interested recruits when it is seen that opening up new lands for cultivation or new mines and oil-wells for exploitation, reduces the bargaining power of owners of natural resources.

Other incidents might be mentioned. Bargaining power, with its sanctions of economic coercion, rises to a pre-eminence even more comprehensive and world-wide than the formerly dreaded political power with its physical coercion. The state, indeed, becomes one of the instruments of bargaining power, either by its own direct act or by its permission of concerted action. And through the use of this political instrument the struggle for bargaining power reaches its pre-eminence. The economic theories of free competition and laissez-faire, deductively worked out from the presuppositions of liberty, equality, self-interest, individual property and the mechanism of competition, give way to pragmatic theories of the reasonable use, under all the circumstances, of that bargaining power which may be equally or unequally shared by individuals, classes or nations. These theories of bargaining power are directed towards the economic, legal and ethical problems of unfair discrimination, unfair competition, unreasonable price, and unequal treatment of the bargaining power of associations of manufacturers, farmers, laborers, merchants, bankers or others. It is the emergence of these issues out of the new predominance of bargaining power that has recently occupied the attention of higher courts, as never before, upon economic, legal and ethical theories of prices, values, practices and transactions.

Reference: The first notable effort to construct a theory of bargaining power was John Davidson's Bargain Theory of Wages (1897). Further development is found in the theories of the historical and institutional economists. See Commons, John R., Legal Foundations of Capitalism (1924). Leading cases referred to: Standard Oil Co. v. United States, 221 U. S. 1 (1911); United States vs. American Tobacco Co., 221 U. S. 106 (1911); United States vs. United States Steel Corp., 251 U. S. 417 (1920); Great Atlantic and Pacific Tea Co. vs.

Cream of Wheat Co., 224 Fed. 566 (1915); United States vs. Colgate and Co., 250 U. S. 300 (1919); Federal Trade Commission vs. Beech Nut Packing Co., 257 U. S. 441 (1922).

III. Bargaining Transactions

Before we can proceed to the analysis of bargaining power we must examine again the bargaining transactions which are its measurable magnitudes. We have noted the unfolding of the idea of social cost from Ricardo's distinction between production and distribution, wherein only labor's share of consumption goods was looked upon as social cost, until we reached the conclusion that all shares of consumption goods, now or expected, are the social costs of reproducing and enlarging the very consumption goods which again constitute social costs, and so on in an ever-repeating process. This gives to the word "cost" a distributive meaning.

We found no corresponding social income, or social happiness, or social value, which, in the case of individuals, is always associated with "cost" as the purpose for which the cost is endured. And therefore we found no social net income which, for the individual, is the very substance of his life and death. To speak of social cost or social income, or social value is to personify society.

We found that the term social cost was a metaphor for the engineering term input, and that social income was a metaphor for output. The social input is human energy of all kinds, the social output is consumption goods. Society, from this standpoint, is a world-wide organization of individuals into a producing concern, whose rate of production is the efficiency ratio of output to input.

But society is also a world-wide debt and pay community out of which the private rights, duties, liberties and exposures of indi-

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viduals are evolved for the purpose of regulating the methods by which they obtain or lose control of this social input and output. From this standpoint of private property the terms cost and value derive their proper meaning, cost being the outgo from the total of the individual's property rights and value being the income. When this pay community evolves into the modern buying and selling transactions, with their borrowing and lending, hiring and firing, etc., then the means of payment become the social focus of attention, so that outgo is money outgo, or money cost, and income is money income or money value. For money is not merely something "nominal" - it is power and liberty to choose any items of social output within the limits of money owned and prices paid.

It is, then, by means of money outgo and money income that the social input and output are acquired, controlled, lost and thus shared among individuals. If so, then the terms social cost and social value acquire a different meaning - not the metaphorical cost and value for individuals, nor the positive outgo and income of individuals, but a meaning of the distributive shares of the social output gained or lost by individuals to each other. This distributive idea of cost and value, quite different from the positive ideas, was suggested but not distinguished by Adam Smith, and has gradually but imperfectly crept into economic theory, although; upon analysis, it is found to be the meaning of the terms "cost of service," and "value of service" employed by courts in practically all of their decisions respecting reasonable value. For their valuation decisions turn, not on the positive pains and pleasures, or the positive outgo and income, of individuals, but on the distributive question of whether individuals or concerns, by means of bargaining power, obtain shares of the social output equal to, in excess of, or short of, the services rendered

towards augmenting this social output.

The first important distinction to be made in any transaction or repetition of transactions is that already made between gross income, gross outgo, and net income. Net income is the individualistic approach, and it is upon the concept of net income, or, at least upon failure to distinguish gross income from net income, that all the individualistic theories, from Smith to neo-classicism, are builded. For the concept of net income is the basis of the presupposition of the individualistic theory that every individual seeks his own interest regardless of the effects on others. But gross income and gross outgo are, in themselves, the effects on others, since they are the shares of the total social output received by and contributed by individuals, from whose conjuncture the net income of individuals and concerns emerges. The repetition, then, of bargaining transactions gives the formula of gross income, gross outgo and net income. And, since it is the bargaining transactions that set the rules within which managerial transactions are conducted, the formula of repetition of bargaining transactions gives us the social mechanisms of both the production of the social output and its distribution among all participants.

In order to prepare the way for distinguishing this subtle change in the meanings of cost and value, from the positive to the distributive meanings, we recur to the economic aspects of our formula of transactions whose ethical and legal aspects we have previously examined. It requires a combination of two aspects of the identical formula, as herewith.

Formula A

Actual	Alternatives
B \$100	B ¹ \$90
S \$110	S ¹ \$120

In Formula A, S and S^1 are prospective sellers of a given commodity or service, and B and B^1 are prospective buyers. We give our attention to S who actually sells to B. In order to derive the net income of S we introduce the formula B, where S appears as a buyer instead of a seller, as follows:

Formula B

Actual		Alternatives	
B (S)	\$90	B^1 (S^1)	\$80
S^2	\$90	S^3	\$95

The reading of the two formulae means that S buys a commodity, (which we assume to be given as constant in quantity and quality), from S^2 at \$90 (Formula B) and sells it to B (Formula A) at somewhere between \$100 and \$110, say \$105. His net income from the two transactions is \$15, resulting from a gross income of \$105 in one transaction (Formula A) and a gross outgo of \$90 in another transaction (Formula B).

It will be seen that in either of the two formulae there are three economic relations functionally bound together such that a change in one will produce a change in the other two. These relations are opportunity, competition, and price. Each of the four parties, if a dispute arises, can bring a suit at law on the ground either of unequal opportunity, unfair competition or unreasonable price (value). If such a suit is decided one way or another the decision affects the others.

Sellers S, for example, in Formula A, can choose between the two opportunities of selling to B at \$100 or to B^1 at \$90. Likewise buyer B can choose between two sellers, paying S \$110 or S^1 \$120. Out of this situation may arise a dispute over the issue of equal or unequal opportunity resulting, after many trials and errors, in the present legal doctrine of reasonable or unreasonable discrimination.

Again, B is in competition with B^1 , and S in competition with S^1 (Formula A). Disputes may here arise as to whether S is unfairly cutting prices below what S^1 is charging, or whether B is unfairly raising prices above what B^1 can afford to pay. Out of these relations arise the dispute over free competition and fair competition.

Finally S in Formula A may be able to force B to pay as high as \$120, which is his next opportunity, or B may force S to accept as low as \$90, which is the next best alternative for S. Out of this relation arises the issue of reasonable or unreasonable price.

Thus the three economical relations are interdependent. If S gets a decision against discrimination, it changes both the competition and the price for himself and others. If S gets a decision against unfair competition, it changes both the discrimination and the price for himself and the others. And finally if S gets a decision against an unreasonable price it changes the relations both of discrimination and competition.

It has required several decades for both economists and courts to reach all of these distinctions relative to bargaining power. We begin with Opportunity.

IV. Opportunity

1. Cost of Service and Cost of Product

In Böhm-Bawerk's criticism of Senior's abstinence theory¹ is the beginning of recent doctrines of "utility cost", "opportunity-cost," and of the judicial doctrine of cost of service. Böhm-Bawerk uses the language of psychology - "utility cost" - which we can readily convert into the language of money, "opportunity cost." He

¹ Böhm-Bawerk, Capital and Interest (tr.) 282 (Original German edition 1884 ?).

distinguishes two kinds of loss of well-being, the "positive" kind, where "we inflict on ourselves positive injury, pain, or trouble;" and the "negative" kind, where "we do without a happiness or satisfaction which we otherwise might have had." These two methods of measuring cost are not cumulative. The one cannot be added upon the other. They are alternative. "Since in the economic life of today," he says, "we have an infinite number of possibilities of turning our work to fruitful account," the measurement of sacrifice in terms of labor-pain "almost never occurs. At the present time, then, we estimate by far the greater number of cases not by the pain of work, but by the profit or advantage we have renounced."¹

To this renounced advantage Böhm-Bawerk gives the paradoxical name, "utility cost," whereas to the sacrifice, pain, or trouble, he gives the name "positive cost." Since, however, the word "negative" is here given a meaning different from the mathematical meaning of positive and negative, and since the meaning here intended is evidently the volitional meaning of choosing between alternative incomes we shall use the term "distributive cost," as suggested by Davenport, contrasted with the mathematical "positive cost" of the classical and hedonic schools. The positive costs lead to the idea of net income of individuals. The distributive costs lead to the idea of a greater or lesser share of the social output.

This will appear when we turn from Böhm-Bawerk's natural economy to the social economy of a pay community. Here everything is owned by somebody, and before the individual can have access to nature he must bargain with owners. Hence we convert the psychological term "utility cost" into the distributive term "opportunity-cost." Opportunity cost arises from choice of opportunities. Thus, in Formula A,

¹ Ibid., 284.

the seller S has before him two opportunities to sell to two competing buyers. He cannot sell to both, because we assume that his property is limited to one commodity which he offers to sell, and therefore he must choose between the two buyers. Buyer B offers \$100 but buyer B¹ offers only \$90. If seller S cannot induce buyer B to pay more than \$100, then S, in accepting \$100 for his commodity, thereby rejects the \$90 offered by B¹. This \$90 is to S his opportunity cost - and the meaning is "negative," even paradoxical, because it is a cost, not in the positive sense of outgo, but in the social sense of an alternative lesser share of the social output which he foregoes.

The positive cost for S is the \$90 which, as a buyer, he pays to S² in the other transaction (Formula B). Thus "opportunity-cost" and "positive cost" are not cumulative. They are, in fact, the difference between private outgo and social opportunity. The buyer B¹ stands for the next best of all social opportunities open to S to sell his commodity, while Buyer B stands for the best of all social opportunities.

Hence we arrive at a distinction to be made, but not usually made, between "surplus" and "net income." Net income is the difference between the gross income of S, (\$100 received from B), and the gross outgo (\$90 paid to S²). But surplus, in this case, is a difference between two gross incomes, the income \$100 offered by B as his outgo, and the alternative lesser income \$90 offered by B¹ as an alternative outgo. Thus surplus is the "unearned" income, or "quasi-rent," arising from mere freedom to choose between two social opportunities represented in the persons of two proprietors, B and B¹. But net income is the difference between a positive outgo and a positive income. In other words, surplus is the volitional difference between the alternative lesser income and the positive greater income; but net income

is the mathematical difference between positive outgo and positive income.

It is upon this magnitude of surplus rather than net income, and of its measurement as opportunity-cost rather than positive cost, that the courts, as we shall see, construct their concept of reasonable cost of service.

In order to preserve this distinction, however, it will be necessary to have a term that will signify positive cost and distinguish it from the opportunistic cost of service. We shall distinguish it as "cost of product," whereas the opportunistic concept is "cost of service." Cost of product is the classical and hedonistic idea of cost as positive outgo of money or pain in exchange for positive income of goods or pleasure. But cost of service is the volitional alternative income rejected because the individual is finite and cannot have both incomes at once, and therefore chooses the larger. Thus cost of product is outgo, but cost of service is alternative income. Cost of product is one of the factors of net income, but cost of service is one of the factors of surplus which augments net income.

It is to D. I. Green and H. J. Davenport that we owe the first formulation of this idea of opportunity cost. Each discovered it independently in 1894. While Green, says Davenport, was "the first to formulate the doctrine in entire definiteness," Davenport was "the first to give it systematic application." This he did by means of a detailed examination of the leading theorists of the classical and hedonic schools, to which the reader is referred. While he found that Böhm-Bawerk and the Austrian school had recognized this principle, yet they did not adhere to it "without vacillation," and the doctrine had also been stated or implied by several recent economists under

¹ Davenport, H. J., Value and Distribution, (1908); Economics of Enterprise (1913). Green, D. I., Quar. Jour. Econ., July 1924.

such names as "substitution cost," "displacement-cost," and "quasi-rent." We have followed Davenport's exhaustive analysis and his contrast with the older theories, by reducing it to the foregoing formula of a transaction and giving to it his name of "distributive cost" and "distributive share."¹ These two terms describe quite accurately the process of choosing which occurs in every bargaining transaction. What each seller chooses is that one which is largest of all the alternative shares of the total social output offered to him by buyers in the form of money. This we name his "distributive share", the share which he accepts. In making the choice, however, he foregoes or rejects the next smaller share of the total social output offered to him by the next best buyer. This we name the "distributive cost," and it is identical with the concepts of substitution cost, displacement cost, or Green's and Davenport's opportunity-cost. The distributive "share" is the claim to that share of the social output which he actually receives as "money income." The opportunity-cost is the claim to a smaller share which he rejects and which therefore becomes a "cost," in the volitional sense, of lesser share not accepted, in order to obtain the larger share accepted. The difference between the two is a quasi-rent, a surplus, an unearned income, obtained without cost by merely choosing, but serving as one of the constituents that go to augment his net income, which, in turn is his net share of the total social output.

2. Value of Service and Value of Product

But if the individual can gain a surplus, which augments his net income, by having the opportunity to choose the larger of two

¹ Value and Distribution, 322.

gross incomes, cannot he also augment his net income by having the opportunity to choose the lesser of two gross outgoes? We look for this analysis in H. C. Carey's Principles of Political Economy, 1837, which was bodily taken over and popularized without acknowledgment, even to the words and illustrations, by Bastiat four years later.¹

Bastiat was Carey's piratical press agent, but he was so brilliant and had such a brilliant antagonist in the anarchist Proudhon to stimulate his rhetoric, that we quote Bastiat to expound Carey.

Bastiat begins with a supposition the opposite of Böhm-Bawerk's. Instead of an abundance of opportunities, between which we choose the most remunerative and therefore disregard the pain of sacrifice, Bastiat starts with the pains of sacrifice, between which we choose the least onerous, and disregards both the scarcity of opportunities and the positive pleasure of income. This, he says, proceeds from the universal law that wants exceed the supply and therefore require labor to produce a supply. But since labor is disagreeable the value of commodities to one who acquires them in exchange is not proportioned to one's own labor cost in producing them but to the labor which it would have cost him if he had produced them himself. Their value is thus measured by the labor saved, not by the labor cost. "The value," says Bastiat, "far from bearing a necessary proportion to the labor performed by the person who renders the service," as had been the assumption of Ricardo, Marx, and Proudhon, "may be said rather to bear proportion to the labor saved to the person who receives it. This

¹ Bastiat, Frederic, *Harmonies Economiques* (1850, tr. same year). See Carey's claim to priority in his *Principles of Social Science*, Vol. 1, preface, (1857) and its verification by Gide and Rist, *History of Economic Doctrines*, 327 (1913 tr.), and Haney, L. H., *History of Economic Thought*, 304 (1911, 1920).

general law of value, which has not, so far as I know, been observed by theoretical writers, ¹ nevertheless prevails universally in practice. . . It has its principle and foundation less in the effort of the person who serves than in the effort saved to him who is served." ²

Thus we may name Bastiat's subjective "value" a "negative" value, or, paradoxically, a disutility-value, the value to self of avoiding a more onerous alternative outgo, just as Böhm-Bawerk's negative cost, or "utility-cost" was the cost to self of foregoing a lesser alternative income. Converted into monetary terms this is a dis-opportunity-value, equivalent to the legal concept (which was also Carey's and Bastiat's concept), the value of service. This, we have seen is the "distributive" rather than negative, meaning of value. It is the value to self of avoiding a greater outgo to others by having the opportunity to choose a lesser outgo. The situation may be seen in the formulae of transactions.

In Formula B, our seller S now becomes a buyer. He has two alternatives. He can buy his commodity from S^3 at \$95, or from S^2 at \$90. As a buyer, seeking his own advantage by choosing between the disagreeable alternatives imposed upon him, he selects the less disagreeable and pays \$90 to S^2 . This seller has therefore performed a service for him - a service which has saved him from the next worse alternative of paying \$95, and this \$95 is therefore the value of the service rendered. But the surplus thus saved, towards augmenting his net income, is \$5. It again is, not an "uncarned income," but - an unearned "saving," a "quasi-rent," arising from mere freedom to choose the lesser of two alternative costs imposed upon him by the social

1 It was implied in Adam Smith's theory, and was explicitly the whole of Carey's economic philosophy.

2 Harmonics, 114.

mechanism of transactions that compels him to pay for the commodities which are needed by him but are limited in supply and owned by others.

The situation is duplicated in Formula A. Here the buyer B has two alternatives, the \$120 asked by S¹ and the \$110 asked by S. If he cannot persuade S to take less than \$110, then \$110 is his positive outgo, while \$120, his next worse alternative, is the value of the service rendered to him by S, and \$10 is the surplus which augments his net income by that amount.

It is upon this concept of choosing the lesser of two evils that the courts build their concept "value of service." But since, as in the other case, there are two meanings of value, the positive value of income and the distributive value of avoiding an alternative higher outgo, we shall need again a pair of terms to preserve the distinction. They are "value of product" and "value of service." Value of product is the classical and hedonistic idea of value as positive income of money or pleasure received in exchange for positive outgo of goods or pain. But value of service is the volitional alternative higher outgo avoided because the individual is finite and cannot endure both outgoes at once and therefore chooses the lesser. Thus value of product is income and value of service is alternative lesser outgo. Value of product is the other factor of net income mathematically opposite to cost of product, but value of service is another volitional surplus which also augments net income.

This concept of value of service was not something new in economic theory - it was a new name and a new application of Ricardo's doctrine of comparative cost in international trade. Ricardo had said, "The same rule which regulates the relative value of commodities in one country, does not regulate the relative value of the commodities exchanged between two or more countries."¹ Carey builded upon

¹ Ricardo, Works, 75; ed. by McCulloch.

these two "rules" of Ricardo. In one country, like America, he says, the positive quantity of labor may be a measure of relative values, as Ricardo held, because all labor has "an equal power to command the services of nature. The product of two carpenters in New York or Philadelphia can generally be exchanged for that of two masons." So also the product of different laborers in different parts of France, or England, or India are about equal and will exchange at rates proportionate to labor-time within the country. But this is not true in foreign exchange. "The time of a laborer in Boston is nearly equal in value to that of another in Pittsburgh, Cincinnati, or St. Louis; but it will not be given for that of a laborer in Paris or Havre. . . . The people of Italy give a year's exertions for less than those of England obtain in half a year."¹

Yet foreign trade is advantageous because each country exports that on which its own labor is most efficient, and imports that on which its own labor is less efficient. Thereby it saves the higher amount of labor required for its own high-cost products, and can devote that labor to its low-cost products for export. It is but a step from this doctrine to say that the measure of the value of the service rendered by the foreigner is the alternative amount of home labor that would be required to produce the goods imported. It was this idea of choosing the lesser of two labor costs that Carey and Bastiat expanded into a universal law of value, applicable in both domestic and foreign trade, and thus changed Ricardo's and Marx's doctrine of positive labor costs as the measure of value, to Ricardo's comparative labor costs as the measure of value. By giving to it the name "value of service," measured by alternative higher labor cost,

¹ Carey, 1 Principles of Social Science, 155.

instead of "value of product," measured by its own labor-cost, they placed it on the map as something universal, where Ricardo had seen it only in foreign trade. But it changed the whole concept of value from the positive classical and communistic labor cost to a competitive choice of the lesser of alternative costs.

It is rather strange that Davenport, who developed so brilliantly the companion doctrine of opportunity-cost, did not develop also this doctrine of disopportunity-value. It is possibly because he, like most economists, had dismissed Carey and Bastiat as irrelevant freaks, and therefore devoted his attention to the classical and hedonic economists. Davenport does make use of the one contribution made by Carey which had been immediately accepted by all economists, namely his substitution of "cost of reproduction" for the "cost of production" of the older economists,¹ but he gives this no particular attention. As a matter of fact, Carey's "labor cost of reproduction" was an entirely new concept, not merely equivalent to, but contradictory of, Ricardo's and Marx's labor-cost of production. It was not a theory of labor-cost at all but a universal theory of opportunity to choose the lesser of two evils. But it has been accepted by economists and courts without question. Yet it is an idealistic volitional concept of alternatives, constructed in imagination as an "ideal typus" of what the price would be if there were free competition. Its universality, however, is unquestionable, and readily appears when reduced to the formula of that ultimate atom of economic theory, the bargaining transaction, wherein four competing participants are endeavoring to choose, not only as sellers the larger of two incomes, but also as buyers the lesser of two outgoes.

Another reason for Davenport's oversight of disopportunity value

1 Davenport, Ibid., 322.

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was his failure continuously to make use of the distinction between gross income and net income. Had the two constituents of net income, namely gross income and gross outgo, been always carried in mind, then there would have been called for the concept of choosing the lesser of two gross outgoes as much as the concept of choosing the larger of two gross incomes. He does, indeed, parenthetically by way of caution, make it clear that opportunity-cost, the choice between gross incomes, should not be confused with what we might name occupation-cost, the choice between two net incomes, representing two different occupations. "The doctrine of opportunity-cost," he says, "rightly understood, does not point fundamentally to the question of how much could be realized of gain in some alternative occupation or activity, but only to how much must be realized in the occupation or activity in order to insure its continuance."¹ In other words, the choice is not that of changing occupations, but is that of choosing between buyers who patronise the same occupation or going business. The buyer who pays the higher price is chosen and the buyer rejected measures opportunity-cost, or cost of service. But somehow there was overlooked the companion series of choices between sellers of raw material or sellers of labor, wherein the seller who sells at the lower price is chosen and where the seller avoided measures the disopportunity value, or value of service.

Davenport seems to pass this off as the self-evident fact of competition. The buyer does choose the lesser price asked by competing sellers, but so does the seller choose the higher price offered by competing buyers. Hence, according to Davenport choice of opportunity should not be confused with competition. His opportunity cost is functionally dependent on competition of buyers, as may be seen

¹ Davenport, Ibid., 92, 93.

from the formula, but competition is a rivalry between competitors, while opportunity is a choice between rival competitors. But this is true whether the competitors are competing buyers or competing sellers.

A further explanation may be offered, from a study of court decisions on reasonable cost of service and reasonable value of service. Both of these concepts appear in court decisions and a study of these decisions reveals that they reject the Ricardian and classical economists' notions of positive cost and positive value, since these are believed to be private matters of individual net income which do not concern the courts in disputes over prices and values, and they therefore resort to the comparative method of measuring alternative incomes or alternative outgoes which might be shown to be the reasonable alternatives open to buyers or sellers if they were free to choose under the existing conditions of supply, demand, custom and the usual practices of persons in similar circumstances. When resolved into economic terminology this is Ricardo's comparative costs, Carey's and Bastiat's cost of reproduction and value of service, or the more technical disopportunity value, as well as Davenport's opportunity-cost, or cost of service. Here, in the legal forum, the comparative and distributive concept, value of service, is as often at issue as the similar comparative and distributive concept, cost of service.

A still more likely explanation of the omission of the value-of-service concept is the absurd meanings given to it by Carey and Bastiat. The term was to them an old acquaintance from Ricardo, quite inconsistent with his usual doctrine, but suddenly discovered as throwing a new halo around the abused head of Capitalism. To discover the source of these absurdities we are required to examine what is reasonably and properly meant by the volitional concept of choice of alternative.

3. The Meaning of Alternatives

When Bastiat illustrated his concept of value of service he took Proudhon, who had been declaiming against rent, interest, and private property, back to "a primitive forest and in sight of a pestilential morass." Here, he said to Proudhon, "is land exactly like what the first clearers had to encounter. Take as much of it as you please. . . Cultivate it yourself. All that you can make is yours. I make but one condition, that you will not have recourse to that society of which you represent yourself as the victim. . . A laborer," he continues, now obtains with fifteen days' work" a quantity of good which he "would formerly have had difficulty in procuring with six hundred days' work." Hence six hundred days' work is the "value of the service" which landlords and capitalists render to the laborer in the form of food. The positive cost or "cost of production," is fifteen days' labor. That was Ricardo's and Proudhon's idea of value. But the labor saved, or "cost of reproduction" is 585 days' labor. That was the value to the laborer of the services rendered by landlords and capitalists, in return for which rent, interest, or profit was an insignificant payment.

Similarly when the regulation of railway rates was in its infancy, the legal representation of the railways took the farmers back seventy-five years and argued that the value of the service rendered by the railways was what it would cost the farmers, if there were no railroads, for the transportation of wheat over dirt roads by horse carriage. This was estimated at least at 50 cents per ton mile whereas the railway charge was only some 3 cents per ton mile. The value of the service rendered by railways to farmers was therefore 50

1 Harmonies, tr. 201. Similar illustrations had been used by Carey to disprove Ricardo's theory of rent.

cents, for which the railways charged an insignificant 3 cents, and the farmers got a surplus of 47 cents. Hence it would be unjust if their railway rates were reduced.

This, too, is the instinctive argument of business men when they expound the value of their service to labor by furnishing employment, or advertise the value of their service to consumers by substituting "service" for price-cutting.

The argument is good but is liable to fallacy which may be named the fallacy of inaccessible options. It is in fact a fallacy respecting the human will. The will is limited to here and now. A laborer does not choose between the cost of food now and the cost a thousand years ago. The farmer does not choose between shipping by rail now and shipping by dirt road fifty years ago. He chooses between the railway and the inaccessible option of hauling his wheat to Europe by horses and trucks. This is "no choice." He does not choose between an accessible and an inaccessible alternative, but between the two least onerous alternatives accessible at the time and place. It is his misfortune if the next alternative is unreasonably onerous, but if it is so, then it nevertheless is the actual value of service under the circumstances, even though it is shocking to common sense.

In such case it remains only to construct in imagination an "ethical typus" that shall be a "reasonable" value of service, and this is the imaginary "cost of reproduction" by an alternative but non-existent railway. It soon was discovered by the railway contention, like Bastiat's contention, was absurd. Its absurdity rested on the common sense observation that we do not choose inaccessible alternative. It is the absurdity of a free will instead of a free choice. The reasonableness may be imaginary, but that is the way it always starts.

More valid is Bastiat's other illustration. "I take a walk along the sea-beach, and I find by chance a magnificent diamond. I am thus put in possession of a great value. Why? Am I about to confer a great benefit on the human race? Have I devoted myself to a long and laborious work? Neither the one nor the other. Why, then, does this diamond possess so much value? Undoubtedly because the person to whom I transfer it considers that I have rendered him a great service - all the greater that many rich people desire it, and that I alone can render it. The grounds of his judgment may be controverted - be it so. It may be founded on pride, or vanity - granted again. But this judgment has, nevertheless, been formed by a man who is disposed to act upon it, and that is sufficient for my argument."¹

Here our terminology is applicable. The value of the diamond is "value of product" to the seller, and this is the price paid to him by the buyer. The "cost of the product" to the seller was the labor of finding it. The difference is net income for the seller. But the "cost of service" to the seller was the lower price which the next rich man offered to pay but which the seller rejected. The difference is surplus for the seller. On the other hand, the "value of the service" to the buyer was the higher price he would have been compelled to pay had not the finder of the diamond "saved" him from that expense by selling at a lower price. The difference between the two is surplus for the buyer.

Carrying the analysis further, in order to illustrate the terminology, while the positive cost to the finder was the insignificant labor of finding it, there was a "disutility value" measured by the greater labor cost of digging for the diamond. This was, metaphorically, Bastiat's value of the service rendered by the sea-beach -

¹ Ibid., 113.

one of nature's "gratuitous services" - to the finder by saving him from the greater labor-cost of digging. Or, applicable to Bohm-Bawerk, the buyer of the diamond doubtless obtained greater satisfaction from the diamond than from an equal expenditure for food. The "utility" of the rejected food was the "utility-cost" to him of choosing to enjoy the diamond instead of the alternative food.

The fallacy of inaccessible options suggests a related fallacy regarding the value of service. It is said that in choosing the least onerous alternative the individual rejects, not only the next worse alternative but all alternatives inclusive, from the next worse to the "most worse" of all. Therefore the value of the service to him is the sum of all the avoided alternatives, which might conceivably rise to infinity.

This fallacy may be named the fallacy of supernatural alternative. Only an infinite being can enjoy all possible alternatives at the same time and place: but then he would not choose - he would take them all at once, regardless of space or time. But a finite being is limited to but one of the infinite possibilities of the world at the moment of choosing. He may be in error as to which is best and next best, or worse and worse. But anyhow he can only take one at a time, though the size of that one may be big if he is rich, or small if he is poor. He cannot take both at the same time and place. Hence he is forced into the predicament of choosing. In the mental process that precedes the act of choice, and more so if the process is instinctive, he has already rejected all of the remote alternatives, and has narrowed down to the two that are deemed to be the two best or the two "least worse." Here the final predicament is resolved, not by thinking but by acting. And the measure of his advantage is either the next best income which he foregoes, which therefore is the cost to

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him of being compelled to choose, or the next worse outgo which he avoids, which is the value to him of the opportunity to avoid that next worse alternative. Finite choice is choice of the better of two accessible alternatives. By avoiding or foregoing one of the two he has left all of the others to the world at large.

An opposite fallacy occurs in Böhm-Bawerk's criticism of Senior's abstinence theory, above noticed. Böhm-Bawerk was led to eliminate pain and sacrifice from economic consideration on account of his theory of abundance of opportunities under modern conditions. Hence, for him, all costs were utility costs - the next best alternative income foregone. But what he did was, not actually to eliminate positive pain and positive cost, but, by the usual device, to virtually eliminate them by supposing them to be constant, just as Bastiat virtually, but not actually, eliminated utility and opportunity by supposing them to be constant. This oversight, we see arose from failure to perceive that net income is the outcome of two variables, gross income and gross outgo. By assuming outgo as constant, then the variable, with Böhm-Bawerk, was the pleasures of utility or gross income. But by assuming income as constant, the variable with Bastiat was disutility or gross outgo.

But this process of virtual elimination is only a logical device as a substitute for the laboratory methods of actual elimination. There is really, in every transfer, a variable gross income for one which is the identical gross outgo for the other. And a transaction is two transfers. If one of these is virtually eliminated by keeping it constant then the others are the variables. In the repetition of transactions of selling, it is the gross incomes that are considered to be variable. In the transactions of buying it is the variable gross outgoes that are considered. But it is the conjunction of the two

variables in two transactions that yields the actual dimensions of net income.

Here we recur again to the third concept of choice of alternatives, previously noted, namely, the choice between two net incomes. This net income concept of opportunity is quite different from the gross income concept. Opportunity cost refers to the single choice of a seller between ~~two~~ gross incomes, but choice between net incomes is the two choices of a person, who is both buyer and seller, between two gross outgoes as buyer and two gross incomes as seller. For this reason we have assigned to this choice of net incomes the name of occupation cost instead of "opportunity-cost." For, consider what is the situation of a person who both obtains gross income by selling and suffers gross outgo by buying. He is evidently a person who occupies a position such as a job, or even an entire going concern in all its relations of buying materials and labor and selling the finished product. This position in the social mechanism is his occupation, and "occupation-cost" must therefore be a choice between two occupations, wherein the chooser abandons the occupation having the lesser net income and chooses the occupation having the larger net income. He chooses between occupations, not between buyers of his product and not between sellers of labor and raw material. He changes his occupation - not his customers or clients.

While this concept is proper enough for an economic situation where a person leaves one job and takes another job, or where a whole establishment abandons one occupation, say bicycles, and transfers to another, say automobiles, yet it conceals what happens when he remains in the same occupation. What happens there is the social phenomena of bargaining and the social relation of sellers and buyers, upon which are founded most of the issues that come up for decision.

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Thus, "occupation cost" conceals the gross income that is paid as social cost for services rendered, as well as the gross outgo of service rendered to others. It makes impossible, therefore, the analysis of utility cost, opportunity-cost, or legal cost of service, and the analysis of disutility-value, disopportunity value, or value of service of Bastiat and the courts. Only in case gross income and net income happen to be identical, because positive costs have been eliminated by contract, as is done in the case of contract interest or contract rent, does gross income coincide with net income and therefore, in that case, occupation cost happens to coincide with what we define as opportunity cost. But in all such cases as jobs and going concerns, where the two variables of gross income and gross outgo determine net income, the separation of buying from selling must be made. And the separation is actually made.

We are now in position to summarize why it was that Bohm-Bawerk and Davenport have left their theory of opportunity unfinished. Having eliminated positive cost (pain or money outgo) by resorting to distributive cost (utility-cost or opportunity-cost), they have failed to eliminate positive value (pleasure or money income) and thus have not resorted to distributive value (disutility value or disopportunity value). The reason is the failure to distinguish value as net income and value as gross income.

Back of this oversight are the two reasons, already suggested, why the concept of disopportunity value has not been unearthed. One is the optimistic assumption that we live in a pleasure economy and hence do not choose between pains. The other is the individualistic assumption of classical theory that we seek the largest possible net income regardless of the effect on other people. The first eliminates positive costs by assuming that they are equal and therefore negli-

gible. The second conceals positive costs in the individualistic notion of net income. But they are not concealed, and no assumptions are made, if we start with the analysis of actual transactions.

The significance of this distinction between opportunity and occupation lies in the fact that the notion of opportunity, as here defined, by bringing to the front the concealed notions of gross income and gross outgo, brings to the front the concealed issue of opposition of interests and the resulting need of courts to bring about harmony of interests. Gross income for the seller is gross outgo for the buyer, whereas net income or loss is merely the excess of one over the other. The same is true when the equivalent terms are expressed as value and cost. Positive value for the seller is the price at which he sells; positive cost for the buyer is the same magnitude which he pays; net money value is the difference. An increase in gross income is a gain for the seller and an equal loss for the buyer. But an increase in net income conceals this opposition of interests. For buying and selling are not physical facts of production and consumption, nor the physical facts of delivery or exchange of commodities. They are the legal facts of transferring legal control over a share of the social output of commodities and services. As such, they involve negotiation, choices between offers and bids made by others, partial or complete control of supply and demand, inducements, persuasion, coercion, duress - in short, bargaining. The familiar terms, employed in economic theory, from the time of Quesnay, of "circulation" of goods, "flow" of income, "exchange," and so on, derived, as they are, from analogy to physics and engineering, conceal this economic act of bargaining and this opposition of interests. This concealment is not noticed, partly because the transfer of titles is not distinguished from the transfer of things, part-

ly because, by starting with the individualistic notion of net income, the bargains by which net income is determined are not brought into the problem.

But, by starting with the notion of gross income and gross outgo, epitomised in every transaction, the bargaining relations and the opposition of interests are brought to the front and can be measured. While the notion of choice between net incomes, measured by "occupation cost," conceals the bargaining activities that may or may not harmonize the opposing interests, the notions of choice between gross incomes or gross outgoes, measured by "opportunity-cost," or "cost of service," and "disopportunity value," or "value of service" are the measure of the gains and losses derived by one person from another person in the bargaining transactions themselves.

V. Limits of Coercion

But here a second dimension of the bargaining transaction emerges. In Formula A it is evident that seller S cannot force buyer B to pay more than \$120, since above that margin his competitor S¹ would take his place as the seller. Neither can buyer B force seller S to accept less than \$90, since below that margin his competitor B¹ would purchase from S. These limits, \$120 and \$90, may be named, for this assumed transaction, the Limits of Coercion. They are the limits where S and B have free opportunity.

We have placed these limits far apart, which may seem absurd, but they were exactly the situation of scarcity faced in the Middle Ages when the markets overt, the guilds and the sovereigns adopted their rules regulating trade, and they continue to be typical of many situations of less capable bargainers with which modern rule-making attempt to deal. For, within these limits of coercion, determined by accessibl

It is a common mistake to suppose that the only way to get the most out of a book is to read it straight through from beginning to end. This is not necessarily the best method, especially if the book is long or if the subject is unfamiliar. It is often better to read a few chapters at a time, or to read a chapter here and there, as the need arises.

With this in mind, the reader is advised to read the book in a systematic way. It is suggested that the reader should read the first chapter in full, and then read the second chapter in full, and so on, until the end of the book. This will give the reader a complete understanding of the subject, and will enable him to see the connection between the different parts of the book. It is also suggested that the reader should read the book at a steady pace, and should not allow himself to be distracted by other matters. This will ensure that he gets the most out of the book, and will enable him to see the connection between the different parts of the book.

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alternatives, where shall the price be determined? If S is the stronger bargainer, having control of a commodity limited in supply, but having, however, such abundance of resources that he can afford to hold out longer than the buyer B, then he can force the price up to the limit of free opportunity offered to B by the next strongest competitor, S¹. If, inversely, the buyer B is the stronger bargainer, having less need of buying than S has of selling, then he can force the price down to the margin where S has the free alternative of selling to B¹ at \$90. Somewhere between those limits of coercion, \$120 and \$90, will be found the actual price agreed upon between seller S and buyer B.

Here is the problem of reasonable price, and here, therefore, arises the social psychology of persuasion and coercion, which may possibly be described as a special case of the hedonic doctrine of pain and pleasure, yet so highly different that the hedonic concepts are meaningless. Yet it is a kind of psychology which must be measured in dollars. The line must be drawn between persuasion and coercion, and the effort of the courts to draw that line in dollars and cents is again the problem of Reasonable Value. Starting with the criterion of reasonableness as a value agreed upon between a willing buyer and a willing seller, the point must be ascertained where each may be said to persuade the other, since, of course, at that point neither coerces the other. What is really being decided, in such case, by the court which takes the social point of view, is whether one individual is obtaining a larger share, and the other is obtaining a smaller share, of the whole social product than is justified by the reasonable cost of service and the reasonable value of service of each. If one is obtaining a larger share than thus justified, then he is coercing the other and the other is coerced.

The outgo of one is of course equal to the income of the other. That is the commonplace of classical economics. But the real question is whether one is giving up a larger share, and the other receiving a larger share of the social output than is "reasonable." If each is obtaining a share justified by his reasonable cost of service and the reasonable value of his service, then the price is persuasive and the value is reasonable.

It must be conceded that the ascertainment and measurement of this point between persuasion and coercion is difficult and complicated, and is partly subject to feelings and emotions, but mainly to the historical development of bargaining power. On this account it is important, because, by deciding one way or another, billions of dollars' worth of the social output are transferred by judicial opinion from one individual or class of individuals to another individual or class. Indeed, upon a single decision on this problem of Reasonable Value will be decided whether ten billion dollars shall go to railway companies in high freight and passenger rates, or to millions of people in lower freight and passenger rates.

VI. Free and Fair Competition

The third dimension of a bargaining transaction has already been anticipated, because the three are so functionally interdependent that one cannot be described without describing the other two. This third dimension is the issue of fair competition versus free competition. If in Formula A, S^1 , who wants \$120, complains that his competitor S is cutting prices unfairly; or if B^1 , who can afford to pay only \$90, complains that his competitor B is pulling away his laborers or material men by offering them \$100; or if in Formula B similar complaints

are made by S^3 against S^2 , or by B^1 against B, then the issue raised is whether the competitor is obtaining his competitive advantage by fair competition or unfair competition.

No place was left for this issue in the mechanistic theories of free competition of the classical economists. Adam Smith assumed that free competition was natural, normal, and, in conformity to his philosophy of divine providence, whatever was natural was rational. But whether it was reasonable or not could not be answered under a mechanistic theory of free competition. The first clear issue on the question of fair competition, as far as we can find, arose in the year 1620, where the question was whether a man who had sold what would now be called the "goodwill" of his business, by agreeing not to set up in competition, could lawfully be compelled to pay damages when he violated his agreement not to compete. The highest court, contrary to its historic insistence on free competition, now awarded damages, and there was then begun the evolution of that intangible property of good will, trade marks, trade names, and so on, which has become increasingly one of the largest assets of business.¹

That decision, it will be seen, sets a limit to the other two dimensions of opportunity and price. The plaintiff corresponds somewhat to S^1 in our Formula A. The defendant is S. S^1 has bought from S the goodwill of his business, thereby supposedly removing him from the field of competition. But S violates his contract, enters the field, and offers inducements to buyers B and B^1 tending to pull them away from S^1 . The decision in 1620 removed S from competition with S^1 . Evidently therefore, the opportunities of B and B^1 are materially changed, and the price will presumably be higher with S out of the field.

¹ Commons, Legal Foundations, 263.

We need not further illustrate these interdependent relations of opportunity, competition and price. They recur with great variety and complexity, since every one of the factors are highly variable in the billions of transactions to which, however, the skeletonized formula affords the clue. We proceed to fill the formula with life, first by the hypothetical history of the classical economists, then by the real history of the records.

VII. The Psychology of Bargaining

To begin with Böhm-Bawerk's hypothetical history, suppose Robinson Crusoe is on an island by himself. This is the proper enough method of virtual elimination of society. Crusoe has to work in order to eat. Eating is utility, and the choice of rabbits instead of fish is the choice of a higher utility, rabbits, at the expense of foregoing the lesser utility, fish.¹ The loss of the fish is the utility cost of choosing the rabbits, and the difference is surplus utility.

Convert this to Bastiat. Crusoe must have the rabbits because there are no fish. He can get the rabbits by trapping them or chasing them. He chooses trapping as the easier way. He "saves" the labor of chasing. The magnitude of this avoided labor is the disutility value to him of the easier labor of trapping them, and the difference between trapping and chasing is pure surplus labor "saved."

But suppose there are two persons on the island - Crusoe and Friday. Neither has any alternative opportunity but must deal with the other or else get along with his own isolated labor. There is no government to enforce rights or protect liberties. Each relies on his own power, and the things which each holds are anything needed

1 Böhm-Bawerk, Capital and Interest, 281. Positive Theory of Capital, Book III on Value.

by the other.

Two kinds of coercion are conceivable, which we distinguish as Deprivation and Privation. One and both parties resort to violence. The stronger robs the weaker. Deprivation. Afterwards, without violence, the stronger continues to rob the weaker by threats of violence. Direct coercion is not only violence - it is also the threat of violence. Violence is the alternative, the inducement. The coerced individual is offered two alternatives and chooses the less onerous. We may say that he has "no choice." But he has. He chooses the lesser pain of work. The greater pain of violence avoided is the value to him of the service which Crusoe renders by offering to him the lesser pain of slavery. Friday gains a surplus and is better off.

But suppose each of the parties is physically the equal of the other. Two Robinsons. Violence and threats of violence are nullified by equalization. Each wants or needs what the other produces and holds. Each has the equal degree of physical power to withhold from the other. Each now submits to the other a different set of alternatives. The alternatives now are not deprivation by violence but are the privation of going without what he needs which the other physically withholds.

But the power of privation, like the power of deprivation, may be unequal. It depends on the relative wants and resources of the opposite parties. But, since resources are but the means of satisfying the corresponding wants, and since the satisfying of wants exhausts resources in course of time, the power of each to determine the ratios of exchange depends upon their relative power to wait for the other to give in. The one with larger resources or less wants can wait longer than the other. He has the larger power of privation

over the other, and can impose a higher positive value on his own service in terms of exchange for a larger quantity of the services of the other. Thus, if the physical power of withholding is equal and if there are no alternative opportunities, then value in exchange is determined by the economic power of waiting. But in either case the value of the service which each renders to the other, when the exchange is finally made, is the greater privation he would suffer than the privation he actually suffers by giving up to the other what he does give up. This difference is the value of the service which one renders to the other. It is Ricardo's comparative cost and Bastiat's value of service.

But suppose, finally, that resources relative to wants are equal; that each has equal waiting power; that thus the economic power of privation has been nullified by equalization just as the physical power of deprivation had been nullified by equalization. Each then must resort to that moral power which we name "persuasion." Each must offer to the other a service which the other is free to reject, and so each must win the other over by appealing to his freedom of choice; must depend on "good will;" must depend on persuasion; and they have attained the "ideal typus" of jurisprudence, the "meeting of minds" of "a willing buyer and willing seller."

But suppose their powers of persuasion are unequal. One is a better salesman than the other. There still remain the further inequalities of fraud, misrepresentation, ignorance, stupidity. These also can conceivably be eliminated by equalization, as is supposed to occur when Greek meets Greek, or Jew meets Scotch.

We have thus analyzed, by elimination, four stages of psychology. First is the stage of man's relation to the forces of nature where the terms utility cost and disutility value seem technically

appropriate. Second, the stage of man's relation to man where the terms opportunity and disopportunity seem appropriate. But this takes on three evolving stages: - physical force, economic power and moral power. The first we may name duress, the second coercion, the third personality. Duress is the direct coercion of physical force. Coercion is the indirect coercion of economic power to withhold. Personality is the moral power of inducement.

Each of these are supposed successively to be eliminated by supposed equalizations, for they do not reveal themselves as force, power or coercion when they are supposed to reach equilibrium by the supposition of equalization.

But we have already left our island and must begin again. Suppose population surrounds Crusoe and Friday and that a government rules them. Physical duress now is equalized, not by supposition but by government. Friday may be the slave of Crusoe, not because Crusoe is physically, economically, or morally superior, but because the state compels Friday to obey, and both relieves Crusoe of dependence on his own doubtful superior power and excludes third parties from offering to Friday alternative opportunities. Whether Crusoe persuades, coerces or whips Friday is a matter of indifference, for Friday is a thing, not a citizen, and the only relation between them is in the managerial transaction of command and obedience, not in the bargaining transactions of buying and selling.

But suppose the state grants to Friday personal and property rights - passes the Thirteenth and Fourteenth Amendments; converts him into a citizen. What it grants, from the economic standpoint, is equal physical power to withhold services and products. Physical force is presumably eliminated by equality of citizenship and a judiciary. Private violence the private threats of violence are prohibited, and

only sovereignty threatens and exercises physical duress. Each must now resort to the economic coercion of waiting until the other gives in.

But the state can not enforce equality of economic coercion. The best it can do is to set upper and lower limits. In order to enforce economic equality, it would be necessary to enforce equality of wants, equality of pains and even equality of opinions regarding the value of things. Conceivably the state might grant equal division of resources through a communistic rationing instead of private bargaining, as the soviets attempted. But though resources might be made mathematically equal, measured by a supposed money of account, yet they would not be psychologically equal, for the differences in wants and aversions of individuals would immediately ascribe differences in the values of things, although they were supposed to be equal in quantity and quality.

Neither can the state, if it authorizes private bargaining, equalize persuasion. Persuasion is that psychological power of one over another by which each induces the other to render a service at a favorable ratio of exchange. Just as wants and aversions are different in their degree of power to induce action, so also is persuasiveness different in its degree of power to induce action. Indeed, it is these differences in desires, aversions and bargaining salesmanship that constitute personality. In lieu of equalizing them, and indeed in the interest of avoiding their equalization in order to enlarge the scope of personality, the state sets upper and lower limits of coercion or fraud, beyond which economic power is not permitted to be substituted for personality. If the state does not set these limits between the persuasions of personality and the coercion of economic power, then private associations attempt to do so under such names as

business ethics, trade union ethics, professional ethics, commercial or labor arbitration, and so on. If the courts adopt and enforce these rules then custom becomes common law.

We therefore now pass to the psychology of judges and arbitrators relative to bargaining transactions. This necessarily takes a historical character, instead of the preceding suppositious character. Decisions of disputes arising from opposition of interests must promptly be made in order not so much to obtain justice as to avoid anarchy and violence and thus to keep transactions agoing. Justice is an afterthought, historically and logically. Hence the psychology of judges follows dominant custom and current practicality, as Bentham protested against Blackstone, rather than happiness and justice.

Historically the Seventeenth Century was a struggle in England, victorious in 1689, to separate judges from the dominance of the king in order that they might be free to base their opinions on the public standpoint, known then as commonwealth, against what was then deemed to be the private standpoint of king and courtiers. Since that time, in England and America, the courts represent the same social standpoint of the economists' theories which we have examined. It is the standpoint which, economically since Ricardo, raises the question whether the shares of the social output going to individuals or classes as the social cost of inducing individuals to contribute, are proportionate to those contributions which those individuals or classes make towards the total output; in other words, whether private wealth is proportionate to the private contributions to the commonwealth.

Since, however, this distribution of social wealth comes up for judicial decisions mainly out of the conflicts of interest inherent

in the transactions of individuals, and since, under the presupposition of individual property, freedom and personality, the court necessarily disregards the net incomes obtained by individuals, they necessarily adopt, for the most part when this issue arises, the comparative method of ascertaining whether the gross incomes obtained, or gross outgoes imposed, in the disputed transaction bear a similarity to what is customary in analogous transactions. Thus arises the principle of comparative costs and comparative values, which lose their paradoxical aspect when once the social, distinguished from the private, method of measurement is comprehended. This also is the method of reasoning, not by way of the psychological economists' ideas of happiness and pain of individuals, nor by way of the anarchists' ideas of ethics and justice, nor by the business man's net income, but by the social method of ascertaining objectively what is customary, dominant, and therefore reasonable.

If the courts feel called upon, as is their situation more or less in England and America, to give reasons for their opinions, then their psychology mounts to the intellectual level of rationalizing, of justifying and of socializing what they instinctively and intuitively feel to be the principles of public welfare applicable to the case in hand. The lower courts are thus relieved of the necessity of thinking upon the social problems involved, for they are merely called upon to follow precedent and authority where clearly expressed, or to make suggestions to the highest court when doubts arise. In America this has gone further, and all acts of legislatures and the Congress are tentative suggestions to the Supreme Courts as to what the latter might perhaps be led to believe are in the public interest. This is so because, even if the court is called upon to decide only whether the legislative act conflicts with the superior constitution,

yet the written constitution is highly elastic and may readily, and often has been changed by changing the meanings of words.

Out of this genetic and institutional psychology of the courts have arisen, after many trials and errors and finally formulated by superior legal minds, certain generalizations, principles, or maxims, believed to reconcile and harmonize the centuries of preceding intuitive decisions rendered to settle the disputes promptly as they arose. Among these the most general of all, believed to reconcile public and private interests in the largest variety of disputes arising under the system of buying and selling, is that principle which describes a free bargain as the meeting of minds of a willing buyer and a willing seller. These terms of willingness are again defined by comparisons with what is customary and dominant, but in general, they mean the virtual elimination of what are currently believed to be¹ duress, coercion and unethical persuasion.

Applying this mode of reasoning to our formula of a transaction, if the seller S (Formula A) sells to buyer B at \$100 and the similar commodity to B¹ at \$90, we reach the inference of unequal opportunity, unequal freedom, or discrimination, which may or may not have social significance, depending on whether it is customary or not. If deemed to be customary then to it is given the economic meaning of equal opportunity.

Likewise if S sells at \$100 while his competitor S¹ is endeavoring to sell at \$120, we may reach the inference of unfair competition, whose social significance again depends on what is deemed to be customary. If deemed to be customary it acquires the economic name of fair competition.

1 Cp. Galusha vs. Sherman, 105 Wis. 263 (1900); Commons, Legal Foundations 57.

In these two illustrations we reach the two terms, equal and unequal opportunity, equal opportunity being reasonable value of service or reasonable cost of service, while unequal opportunity is unreasonable cost or value of service.

Or finally, if S takes advantage of B by forcing him to pay \$120 because that is his best alternative opportunity, or if B takes advantage of S by forcing him to accept \$90 because that is his best alternative, we may infer that there is evidence here of coercion, depending however again for its social significance on comparison with what are deemed to be the dominant and customary transactions. In this case we reach the psycho-economic terms equal or unequal coercion by way of withholding services; equal coercion being reasonable value and unequal coercion being unreasonable value.

It will again be seen that, in our formula of a bargaining transaction, there are three variable dimensions, and we have to observe that these include all of the economic issues that come before the courts for decision on the question of reasonableness. These are the issues of discrimination, or equal and unequal opportunity; of free competition and fair competition; of equality or inequality of bargaining power.

It will also again be seen that in any transaction it is possible for any one of the four participants to bring forward one or all of the three issues. Our seller S, in Formula A, may bring suit against B on the ground of discrimination or of extortion, and against S¹ on the ground of unfair competition, depending upon the point at which either of the three variable dimensions of the transaction seems most patently to impinge. The same is true of the other participants.

It will also be seen that if a decision is rendered on any one of the three issues, it will change the economic magnitudes of the other

It is the duty of the Government to protect the people from the danger of a general strike, and to maintain the public order and the peace of the country. The Government should take all necessary measures to prevent the occurrence of such a strike, and to maintain the public order and the peace of the country.

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two. A decision on fair competition will modify both discrimination and price, and so on with decisions on the other issues. This functional relation between the four parties to a typical transaction as well as between the three dimensions of value will appear when we pass from hypothetical history to real history.

VIII. Scarcity, Abundance, Stabilization

The foregoing was hypothetical history. In order to get a proper perspective for that "historical sense" which enables us to judge the great economists in the light of their time, place and audience, we need to establish an evolutionary background upon which their theories and proposals may be projected. The philosopher Hegel constructed a picture of the unfolding spirit operating through the ages on the analogy of man's reasoning in discussion and debate, through the dialectics of thesis, antithesis and synthesis, repeated over and over on ascending levels to the infinite. Karl Marx reversed this with an unfolding materialism proceeding along the increasing control over nature through the invention of tools and machinery, such that the evolution of the "modes of production" through hunting, fishing, pasturage, agriculture, commerce and manufacture, determined the other activities of religion, government, family and property in an ascending cycle from primitive communism to high capitalism,¹ then back to communism.

The method of reasoning employed in these spiritistic and materialistic interpretations of history are the magical and mechanical methods which seek causation in an analogy either to the human will or to the physical cycles of the universe, and they interpret history

1 Cf. Sombart, Werner, Der Moderne Kapitalismus (1927), Review of the book by Commons and Perlman, Amer. Econ. Rev., Mar. 1929.

VIII. Summary, Appendix, Bibliography

The first part of the book is devoted to a general introduction to the subject of the history of the human mind. It discusses the various theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The second part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The third part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The fourth part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The fifth part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The sixth part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The seventh part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The eighth part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The ninth part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The tenth part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind.

The book is divided into two main parts. The first part is devoted to a general introduction to the subject of the history of the human mind. It discusses the various theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The second part of the book is devoted to a detailed discussion of the history of the human mind. It discusses the different theories of the origin of the mind, and the different views of the nature of the mind. It also discusses the different theories of the development of the mind, and the different views of the nature of the mind. The book is written in a clear and concise style, and is suitable for students of psychology and philosophy. It is a valuable contribution to the study of the history of the human mind.

by a rational compelling force through which events logically happen. Yet it is impossible to point out in any particular case just how this force compels. We cannot see, hear, feel or measure it, and it is based only upon analogy to the sensuous movements of the materials of the external world which our minds perceive. If, however, we adopt the historical and functional method of reasoning which foregoes reference to first causes and compelling forces, we shall seek merely a principle of historical interdependent of the several dimensions of human transactions animated by human willingness. This principle must be one of the unfolding actions, reactions and transactions of individuals, of going concerns and of nature's materials, rather than a single principle, either of idealism or materialism. Such a unifying principle of human transactions in its historical evolution may be found by distinguishing a period of Scarcity preceding the "industrial revolution" of the latter part of the eighteenth century; a period of Abundance with its alternations of oversupply and under-supply for a hundred and fifty years, accompanying the endless industrial revolution; and a period of Stabilization, beginning with the concerted movements of capitalists and laborers, the equalization of competitive conditions, the "live-and-let-live" policies, of the latter part of the nineteenth century in America, and now increasingly prominent.

If we follow the materialistic interpretation, then all the phenomena of economics become merely physical production, physical exchange and physical consumption of goods, according to Newton's laws of motion, and a merely technological principle of increasing efficiency becomes the controlling force in human progress. But this unfolding efficiency is not only cause, it is also consequence of the other dimensions revealed in human transactions. There is very much

The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the problem is not only a scientific one, but also a philosophical one. The scientific aspect of the problem is concerned with the question of how life arose from non-life. The philosophical aspect is concerned with the question of whether life is a necessary part of the universe or whether it is a mere accident.

The second part of the paper is devoted to a discussion of the various theories of the origin of life. It is shown that there are three main theories: the theory of spontaneous generation, the theory of biogenesis, and the theory of abiogenesis. The theory of spontaneous generation is the oldest and simplest, but it is also the least plausible. The theory of biogenesis is the most plausible, but it is also the most difficult to prove. The theory of abiogenesis is the most difficult to prove, but it is also the most plausible.

The third part of the paper is devoted to a discussion of the evidence for the origin of life. It is shown that there is a great deal of evidence in favor of the theory of biogenesis. This evidence includes the fact that life is found everywhere on Earth, the fact that life is found in the most hostile environments, and the fact that life is found in the most ancient rocks.

The fourth part of the paper is devoted to a discussion of the implications of the origin of life. It is shown that the origin of life has important implications for our understanding of the universe. It is shown that the origin of life is a key to understanding the evolution of life, and it is shown that the origin of life is a key to understanding the nature of the universe.

that can be said in favor of the emphasis placed by Karl Marx and the other physical economists and by business men on the increasing rate of production of wealth as the only factor with which economic theory need be concerned. All else follow inevitably, they seem to say, if we attend solely to efficiency. Scarcity is, indeed, inseparable from efficiency, for Scarcity is not the mere ratio of natural resources to population, but is the ratio of output to population, measured in terms of the increasing efficiency of man throughout the ages. But efficiency or inefficiency itself is also a consequence of scarcity or abundance, and each are both consequences and causes of the accompanying circumstances of custom, government transactions and expectations.

The meeting point of all these dimensions of willingness, for the purposes at least of economic science, are the legal control and legal transfer of use-values accompanying their physical control and physical transfer. Legal control is the rights, duties, liberties and exposures assigned to individuals by the community under existing circumstances of efficiency, scarcity, custom, the physical sanctions of sovereignty and the ideals of the future. In a period of scarcity, whether due to inefficiency, or to violence, war, custom or superstition, the legal control and legal transfer are quite different from that in a period of abundance or a period of stabilization. In a period of extreme scarcity the community usually resorts to rationing both the input and the output of man-power, and there is the minimum of individual liberty and the maximum of communistic, feudalistic or governmental control through physical coercion. But in a period of extreme abundance there is the maximum of individual liberty, the minimum of coercive control through government, and individual bargaining takes the place of rationing.

In the new period of stabilization, the actual outcome, in contrast to Marx's communism, is a diminution of individual liberty, enforced in part by governmental sanctions but mainly by economic sanctions through concerted action, whether secret, semi-open, open, or arbitral, of associations, corporations, unions and other concerted action of manufacturers, merchants, laborers, farmers and bankers.

In the foregoing early historical period of scarcity the legal control of goods was not separated from the physical control. An owner physically handed over a commodity or service to another person, and custom and the common law read into the physical transfer a transfer of legal control. But in the periods of abundance and stabilization, the legal control and transfer have been separated in the hands of business men and financiers while the physical control and transfer goes on in the hands of the workers under the commands of these same business men and financiers. The two controls are correlated thruout, but the degrees, methods and effects of correlation are very different in the three periods of scarcity, abundance and stabilization.

We shall not endeavor to go back into the primitive periods of scarcity characterized by the rationing systems of communism and feudalism,¹ but, in order to get our foundation for the correlated theories of economists and jurists, we shall begin with the emergence of the modern bargaining system out of feudalism, and its first appearance as Mercantilism. The custom and the common law in this early capitalistic period of scarcity differed materially in the two kinds of output, namely, commodities and services.

¹ See Perlman, Selig, on village communities, in A Theory of Labor Unions, 248 (1928).

(1) Commodities can be transferred without transferring the person of the producer, but services are transferred in person. The transfer of commodities, however, in this early period, was also a movement of the owner, as well as the commodity, to a market. Owing to the weakness of government and the prevailing violence and perjury of the people, it was necessary to encourage powerful lords to set up markets and to protect them against the inroads of robbers. For this reason a market was usually a special monopolistic franchise, granted to a powerful individual or ecclesiastical corporation, authorizing him to hold concourse of buyers and sellers, with the privilege of taking tolls in consideration of the protection afforded. These markets, thus established, were governed, eventually, by rules laid down by the courts in the decisions of disputes, but primarily by rules of their own making. The courts, in their decisions, developed the principle of the "market overt", or the public, free and equal market, as we now say. Afterwards these principles were extended to retail shops, until eventually the exclusiveness of the market overt was eliminated, but the principles of publicity, equality and liberty remained and were extended to all markets. These principles were not something innate and natural, but were actually constructed by selecting among the good and bad practices of the time. The early physical economists thought of them as handed down by divine providence or the natural order.

In the first place the grantee of a right to hold a "market overt" was required to provide weights and measures and a weighmaster. He was authorized and required to set up a special court (pie poudre courts) for prompt decision of disputes and enforcement of contracts. Every person was declared to have, of common right, "a liberty of carrying his goods to a public fair for sale", and

therefore the owner of the soil or fair, or the local municipal authorities, could not distrain the goods themselves for non-payment of rents or to ls, but must "bring a suit themselves for rent." Any disturbance causing physical obstruction of the market place whereby persons were excluded from a part thereof was prohibited.¹

These were the duties of the lord, or protector, of the market respecting the physical transfer of goods. But further than this it was necessary to provide rules respecting the transfer of title between buyer and seller on the market. These rules also were afterward extended to all retail markets, and, at the end of the eighteenth century to wholesale markets. Sir Edward Coke summarized the common law respecting the transfer of titles in markets overt, as it stood 300 years ago when he compiled his Institutes. He said, "The common law did hold it for a point of great policies, and behovefull for the commonwealth, that fairs and markets overt should be replanished and well furnished with all manner of commodities, vendible in fairs and markets for the necessary sustentation and use of the people. And to that end the common law did ordaine (to encourage men thereunto) that all sales and contracts of anything vendible in fairs or markets overt should not be good only betwen the parties but should bind those that right had thereunto."²

In other words, in order that buyers might be encouraged to come to the markets, it was necessary for the law to provide the conditions under which they could obtain clear title to the goods which they purchased and thus to protect buyers against third parties who might claim that the goods were stolen. The market overt was a place where a clear title to commodities could be obtained, in an age of violence, theft and perjury. Thus the sale of goods, as

¹ Coke's Institutes. Second Part, Vol. 2, pp. 220-222. (16?)

² Ibid., Vol. 2, 713.

decided in the cases cited by Coke, must be in a place that is "overt and open, not in a back room warehouse, etc." The term "overt" in this case implies "apt and sufficient, as not to sell plate openly in a scrivener's shop or the like, but openly in a goldsmith's shop." The sale must not be in the night, but "between the rising of the sun and the going downe of the same." The sale at night was "good between the parties" but did "not binde a stranger that right hath." The sale must not be made by "coven between two of purpose to barre him that right hath," and "the contract must be wholly and originally made in the market overt," and not to have "the inception out of the market and consummation in the market." But, if the seller acquires the goods again, the rightful owner is not barred, because the seller "was the wrong doer, and he shall not take advantage of his own wrong." Again, if the buyer knew that the seller had wrongful possession, "this shall not binde him that right hath."

These rules established the alienability, or what may, by analogy, be called the Negotiability of Commodities, and were suited to a Period of Scarcity and Insecurity when physical goods were actually brought to the market and there was no credit system, no manufacture and sale for future delivery, and no publicity of prices. The rules were evidently adopted by the courts, as Coke says, to promote the public welfare by encouraging buyers and sellers to come together and to bring their products to the market, with the assurance that purchasers in good faith might acquire title against all the world, and even against their rightful owners. And this quality of negotiability, indeed, is the first rule of law needed to establish a free, equal and open market. It was extended, in later times, to include intangible property as well as physical commodities, an extension to which the name "negotiability" is more accurately applied in the technical sense of the term.

Again the offenses of forestalling, regrating and engrossing were prohibited at common law, for they consisted in the purchase or repurchase of commodities in larger quantities than the purchaser could use himself or sell at retail, and so were considered to be attempts by rich persons to enhance prices and hence a denial of equality between buyers and sellers.¹ But, however, these offenses at common law practically prohibited all wholesale business except that of foreign export and import and the fact that such wholesale business was adjudged a criminal offense indicates on what small scale industry must have been conducted and how meager must have been the usual supplies of products that came to the market in this early period of scarcity. Some of these statutes against wholesale business were repealed as early as 1772 and the entire list of common law offenses of forestalling, engrossing, and regrating was abolished² by statute in 1844. The preamble to that act repeated the preamble of 1772, which gave as a reason that it had been found by experience "that the restraints laid upon dealing in necessaries" by preventing a free trade in the said commodities, have a tendency to discourage the growth and to enhance the prices of the same." What they actually prohibited was wholesale business and hence this act of 1844 completely opened up the wholesale markets of England, retaining only the offenses against spreading false rumors with intent to enhance or deery the price of any goods, and the offense of preventing by force or threats any goods being brought to any fair or market. The old rules were no longer needed and were indeed a denial of liberty and equality in an age of abundance, when it was necessary that goods should be sold and purchased at wholesale and rapidly transported from a distance.

1 Coke's Institutes, Vol. 3, 195-6; 4 Bla. Com. 158.

2 7 and 8 Vic. 24 (1844).

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After the discontinuance of the laws against forestalling, regrating and engrossing, beginning 1772, the incoming of wholesale markets served clearly to separate the transfer of legal control from the transfer of physical control of goods. The seller no longer was required by law, in effect, to bring his goods in person to a market in small quantities, but the modern produce exchanges and wholesale markets could arise where the legal control of goods could be transferred by wire or wireless, upon mere samples and specification, such legal control to take place at any point of time from "spot" to "futures". Meanwhile the physical delivery of physical control which was the economists' original idea of "exchange," goes on in the hands of employes, all the way from the farm or factory to the railway and the point of ultimate consumption. The legal transfer of power to control the disposition of goods, at any time or place for the purpose of buying and selling, is separated from the physical delivery of the goods in the hands of employes or consumers for the purpose of production and consumption. And the prices of commodities henceforth become, not the price of the commodity, but the price of promises to deliver legal control of the commodity, specified as to time and place.

The common law prohibited all other restraints of trade in addition to forestalling, engrossing and regrating, as being prejudicial to the public welfare, in that they prevented individuals from freely coming upon the market or freely offering their products or services, or freely increasing the supplies of the same, for the benefit and sustenance of the people. It is the prohibition of these other restraints of trade, not peculiar to wholesaling, that has come down to modern times and has been extended wherever new methods of restraint have appeared, but has been greatly modified in the period of stabilization of bargaining power.

Thus the common law established during the period of scarcity, down to the middle of the 18th century, by the method of excluding what were deemed to be bad practices of business and by giving validity to what were deemed to be good practices of business, the fundamental principles of a free, equal and public market, namely uniform weights and measures, negotiability of contracts and commodities, free accessibility of all persons and commodities to the market, and publicity, or open knowledge of transactions, as against secrecy. Although some of the common law rules which were necessary during a period of scarcity and insecurity were abolished after the 18th century when governments were able to establish security and when inventions had ushered in the period of abundance, yet these four attributes of a free, equal and open market have been retained, namely, uniform standards of measurement, negotiability, accessibility and publicity.

This period of abundance, however, brought in exactly the opposite evils, destructive, unfair or cutthroat competition and their accompanying discrimination or unequal opportunity. This situation had already led the courts, as early as the beginning of the 17th century, to begin to support and sustain the great list of "reasonable" restraints of trade coming under the general name of good will, trade names, trade marks, and recently known as the "law of unfair competition."¹ But notwithstanding these reasonable restraints of trade, the 19th and 20th centuries experienced periodic and general oversupplies of commodities, occurring in irregular cycles. These oversupplies led to destructive competition, price-wars in manufactures and rate-wars in transportation, the elimination of weak

1 Above p. 000; Commons. "Legal Foundations of Capitalism. 263 ff.

competitors, discrimination between buyers or between sellers, and the consolidation or absorption of competitors into large combinations. At first these combinations to prevent rate-wars and price-wars were met by a renewal of ancient laws against monopolies, against conspiracies and against other practices in restraint of trade. But these were found ineffective in the four great departments of Transportation, Manufactures, Labor and Banking.

In the field of transportation the policy of stabilization of bargaining power was frankly adopted by statute in the Interstate Commer Law (1886), for it was realized that the practices of price cutting and secret rebates and secret or open discriminations were as injurious to the public as the practices of monopoly and extortion. But this policy of stabilization was not fully recognized, in the case of manufactures, until the enactment of the Federal Trade Commission Law and the Clayton Act (1913) which penalized price-cutting as much as the old law had penalized price-boosting. And finally, the line of decisions in the dissolution suit of the U. S. Steel Corporation (1919) and in the price maintenance cases, established, as the present policy of the courts of the country, the principle of reasonable stabilization of bargaining power. For it was judicially found, in the Steel case, that the Steel Corporation, although its practices were plainly concerted movements similar to those which formerly had been held to be restraints of trade, nevertheless had not recently resorted to the destructive price-wars that eliminated competition in dealing with the public. The court declared that the Corporation had not obtained freight rebates, had not reduced wages, had not lowered the quality of its product, had not created artificial scarcity, had not coerced or oppressed competitors, had not undersold

1 See cases cited above, p. 000.

competitors in one locality and maintained prices in other localities, had not obtained customers by secret rebates or departures from published prices. Neither competitors nor customers, said the court, testified to any oppression or coercion on the part of the company, and, in fact, they testified to a general satisfaction with the well-known and published policy of stabilization of prices and deliveries pursued by the corporation.

It is plain, therefore, that the policy of stabilization of bargaining power through publicity, for both transportation and manufactures, has been adopted as the policy of the common law and the statute law as interpreted by the federal courts, and moreover, this policy has the approval of customers and competitors.

A similar practice of stabilization has been slowly developed in the history of labor organizations. The first extensive effort of this kind occurred in 1886 when the bituminous coal operators and coal miners thruout the competitive field of Pennsylvania, Ohio, Indiana and Illinois agreed publicly on uniform wages and differentials of wages, such that the operators might have equal access to the markets without secretly or individually cutting wages. This stabilization of competitive conditions has become as important for the employer of labor as it has been for the customers of railways, and is perhaps in process of being as completely sanctioned as the similar practice of the Steel Corporation.

A more recent and equally important movement, as well as more remote from common law or statute law during the period of abundance, is the movement towards stabilization of the purchasing power of money and credit, by means of the concerted action of bankers authorized to act like a labor union. The foremost economists in this field have been Wicksell and Cassel in Sweden, Fisher in America, Hawtrey

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and Keynes in England, and the turning point in America being the Federal Reserve System operated by 10,000 banks and established by law in 1913.

In these four fields, transportation, manufactures, labor and banking, the principle of stabilization of bargaining power has proceeded as a remedy for a practice which is considered to be denial of a free, equal and public market, namely the practice which, in general, may be named Discrimination. It is not high prices that they prohibit - it is unequal opportunity to get higher prices. This will be seen in the next section.

(2) We have referred above to the rules of law which governed the market overt during the period of scarcity. That was the beginning of a free, equal and public market where a concourse of buyers and sellers assembled under the protection of the lord of the market. But there was another class of sellers who did not bring their products to a central market, but who performed services for the public indifferently according as customers came to their places of business. These correspond to the modern manufacturers who sell their products, usually f.o.b. at the place of manufacture, and to all so-called public utilities. Now, considering the great scarcity of producers of this type in that early period, and owing to the scarcity of mechanical skill and training, the early common law developed the rule that anyone who set himself up to sell his services to the public indifferently, as contrasted with one who worked solely for himself or who served a single patron or landlord, thereby assumed a three-fold duty, namely (1) to serve all comers, (2) at a reasonable price, and (3) under a liability for damages if he did not have or did not exercise proper skill.¹ The list of occupations which

1 Wyman, Public Serv. Corp., Adler, E. A. Business Jurisprudence, Land Labor, Capital and Business at Common Law. 28 and 29 Harv. Law Rev. (1914 and 1916).

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were governed by these rules was large and included surgeons, tailors, blacksmiths, carpenters, victualers (grocery keepers) bakers, millers, innkeepers, ferrymen, wharfinger, in addition all who could be classified as "common carriers." In fact, all of these occupations were "common occupations" in the same sense that a "common carrier" is generally one who offers his services to anybody who comes along. The law made no distinction as to whether a person held an actual monopoly or not. In fact, the term "monopoly" was applied, in those days, only to such of these occupations as were required to operate under a franchise or a permit granted by the sovereign, such as a ferryman, and were, therefore, legal monopolies based on special grants, rather than economic monopolies based on private property.

Bruce Wyman and E. A. Adler, in the citations referred to in the footnote, have offered two seemingly opposite theories to account for the attitude of the common law, in those early days, respecting "common employments." Wyman based his explanation on the principle of scarcity, Adler upon the principle of publicity, or common employment. But the two explanations are simply the two variable functions of scarcity and custom. These "common employments" emerged with the breakup of feudalism, and consisted simply in the change from employment under the control of a single master to employment by any customer who might come along. The blacksmith who worked for a feudal lord now worked for any or all of the lords indifferently. Since the courts represented the point of view of the dominant classes, it was but natural, in the sense of customary, that they should impose upon the free but unfranchised workers duties of service to any master who came along. A similar attitude was revealed upon the abolition of slavery in the United States. The ex-slaves, while they had become "freedmen" under the Thirteenth Amendment, were not free to refuse

to work according to their inclination, and the Fourteenth Amendment was necessary in order to grant to them equal freedom with their former masters.¹ So, likewise, the obligations of service were attached to all classes of workingmen and merchants in the early stages of transition from serfdom to liberty.

The principle of scarcity, too, was applicable, since, had there been an abundance or oversupply of workers, their competition with each other would have made it unnecessary to subject them to coercive rules of service.² The two principles of custom and scarcity did not become clearly separated until a later time, when certain occupations like common carriers, or ferrymen, having exclusive privileges of time or place, were retained under the older compulsory principle of common service, but the others were liberated upon the principle of competitive abundance. Then, in more recent times, the principle of stabilization, with its unions, associations, corporations, syndicates, and similar concerted methods of restraining individual liberty in the interests of collective liberty, reverts somewhat to the rationing principles of scarcity as a modification of the bargaining principles of abundance.

In the United States, on account of great abundance of natural opportunities, the primitive rules applying to all common occupations were only occasionally applied and became obsolete at an early period except in the case of what were distinguished as public service occupations or corporations. In these industries the law has developed until the regulations completely cover even the fixing of rates and compulsion of services by government, in addition to the

1 Commons, Legal Foundations of Capitalism, 119.

2 It is upon this fact that Achille Caria builds his Economic Foundations of Society (tr. 19?).

prohibition of discrimination. This is because, notwithstanding the period of abundance which greatly increased the mechanical inventions and the use of mechanical power, yet these public service occupations were not only legal monopolies based on special grants of power, but also economic monopolies, based on ordinary private property, since they occupied strategic localities with only limited opportunities for others to introduce competitive undertakings.

It was not so with manufacturing and commercial undertakings. Here it was not necessary, in the public interest in a period of abundance, that those engaged in these industries should be bound by a duty to serve all comers, at a reasonable price. There always remained an oversupply of producers and productive equipment and no public purpose could be served by compelling a manufacturer or merchant to serve all comers at reasonable prices when customers could readily find alternative manufacturers or customers. Hence these occupations were treated strictly as private businesses, and the law contented itself with maintaining only those four great attributes of a free, equal and open competitive market, namely, standards of measurement, negotiability, accessibility and publicity.

Under the conditions of the early period of scarcity, it was impossible that the modern ethical or legal notion of "discrimination" should arise. This notion arises with the period of stabilization, and marks the new importance of custom as against free competition. The public, or purchasers, did not, in the early period, make their living by buying regularly these commodities or services, but they patronized only occasionally, on market days, or when in need of the service. But modern business is wholly dependent, at all times, on the services rendered by modern carriers, by modern manufacturers of raw materials or unfinished materials, by modern laborers

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assembled in great masses, or by modern banking and credit companies or syndicates. The modern business man, as purchaser, is injured, not so much by extortionate prices which he must pay, as by the fact that his competitor pays less than he does for a large and essential part of his purchases. Business is pulled away from competitors on such narrow margins and large quantities that a competitor is put out of business completely if his competitor pays less than he does. But if his competitor pays as much as he does, even though the price paid by both is monopolistic and extortionate, he can pass along the price to the ultimate consumer. Hence it is that the equalization of competitive conditions which can be accomplished only through stabilization, is deemed so important by modern business men.

But, in the early times of general scarcity, it was not discrimination, as we understand it, but extortion alone that was an injury to the purchaser. Consequently, even when the word "discrimination" was used, it never signified a discriminatory low price -- it always signified a discriminatory high price. In other words, the early common law, applying as it did to markets overt and to practically all occupations that served the public indifferently, had no rule against all discriminations as such -- its rules were directed against extortion.¹

This was evidently the understanding of the Supreme Court of the United States as late as the year 1897. In that year the court had before it a suit in which a plaintiff living in Iowa sought damages from a railway company on the ground that the company showed partiality and favoritism to the said plaintiff's competitors living in Nebraska by charging them lower freight rates, in proportion to the length of haul, than the rates charged to the plaintiff in Iowa.²

1 Wyman, Pub. Serv. Corp. 1280 ff.

2 Parsons v. C. & N. W. RR. 167 U. S. 447 (1896).

The Supreme Court held that it had not been shown that the plaintiff was charged a freight rate extortionate "in itself." "He is only seeking to recover money which he alleges is due, not because of any unreasonable charge, but on account of the wrongful conduct of the defendant."¹ The court then proceeded to inquire whether this alleged wrongful conduct was wrongful at common law, and the test employed was, not that of the social consequences of discrimination in charging one customer less than another customer but merely that of the effect on the railway company's private earnings.² Thus the court said: "Suppose that the officials of the company had charged the plaintiff only a reasonable rate and at the same time had, without any just occasion therefor, given to his neighbor across the street free³ transportation thus being guilty of an act of favoritism and partiality - an act which tended to diminish the receipts of the railroad company and to that extent the dividends of the stockholders. Such partiality on their part would not, in the absence of a statute, have entitled the plaintiff to maintain an action for the recovery of the fare which he had paid and thus reduce still further the dividends of the stockholders. So, but for the provision of the Interstate Commerce Act, the plaintiff could not recover on account of his shipments to Chicago if only a reasonable rate was charged therefor, no matter though it appeared that "through any misconduct or partiality on the part of the railway officials, shippers in Nebraska had been given a less rate." Such was the judicial concept of discrimination in 1897. It was merely a private affair, without social consequences.

Four years after this opinion, the same court, by the same justice (Brewer) declared, in sustaining an opinion of the Supreme

1 Ibid., 455.

2 Ibid., 454.

3 All italics mine.

Court of Nebraska, that "under the common law", not only must the charges be reasonable in themselves, but they must be "relatively reasonable"; no rate should be lower than another "without a just and reasonable ground for discrimination"; and that discrimination was reasonable insofar only as the difference in rates corresponded to a difference in costs and conditions of rendering the service.¹

In other words, the Supreme Court, between the years 1897 and 1901, changed the meaning of the common law word, discrimination, from what had evidently been the early meaning, which made no distinction between extortion and discrimination, to the more modern view which makes discrimination in itself illegal, regardless of whether there is extortion or not. According to the early view, the remedy for discrimination would have been only that of reducing the higher price to a level corresponding to the lower price. According to the later view the remedy for discrimination would be obtained just as well by raising the lower price (or prohibiting free transportation) to a level corresponding to the higher price. The evil sought to be corrected, under the later view, is the partiality or favoritism that gives a competitor free service or services at a lower price. The evil sought to be corrected under the earlier view was only that of charging an unreasonably high price, and the lower price charged to a competitor was not looked upon as discrimination in itself, but was admitted only as evidence tending to show that the higher price complained of might be extortionate.

That the two very different meanings of discrimination should not have been distinguished was evidently owing to the slow process by which the court recognizes a change in custom, and then changes the

1 W. U. Tel. Co. v. Call Pub. Co. 44 Neb. 326, 337 (1895); 58 Neb. 192 (1899); 181 U. S. 92, 102 (1901).

meaning of the word while contending that they have not changed it. The Supreme Court, in 1901, changed the common law meaning of discrimination from what they said it was in 1897, in order to meet a real abuse that had come before it for determination, and the evil of discriminatory low prices had become, by this time, so flagrant and well known to the general public that there was no need of admitting that they had changed the meaning of the word.

The very earliest opinion which we can locate which consciously and knowingly made the extension of the meaning of discrimination so as to prohibit relatively low prices as well as relatively high prices charged to competitors was that of *McDuffee v. R. R. Co.*, 63 N. H. 430 (1873), and the reasoning of the court will show the process of changing from the ancient physical meaning of discrimination to the modern economic meaning. The court there pointed out that, at common law, discrimination consisted in unconditionally refusing to "carry B, if he carries A" or practically imposing an "embargo upon the travel or traffic of some disfavored individual", or consisted in infringing the public right by making a highway "absolutely impassable." These common law notions of discrimination, it will be noted, were physical in character, and the New Hampshire court characterized them as "directly" exercising unreasonable discrimination. The court then went on to extend the meaning of discrimination to economic discrimination, which the court now named "indirect" discrimination, consisting in a "circuitous invasion" such as disagreeable terms, differences in price, no facilities or accommodations for one¹ as against the other.

1 Further demonstration of this development of the meaning of discrimination will be found in *Wyman Public Serv. Corp.* pp. 1280 ff.

The conclusion is that, not until the Supreme Court opinion of 1901 referred to above, could it be said that generally the courts had shifted the meaning of discrimination, in the case of railways, from mere evidence tending to show that a certain high price or other disadvantage was extortionate, that is, unreasonable in itself, to the very different meaning that it was partiality or favoritism towards some competitors and against other competitors, evidenced by a relatively low price, that constituted the evil of discrimination, regardless of whether the absolute level of both prices was high or low.

The general reason why the courts were slow in reaching this new meaning was on account of their earlier view, as shown in the Parsons case of 1897 above cited, that it was solely a private affair of the common carrier if it chose to reduce its own revenues by charging low prices to some customers while charging high prices to other customers, and that the effect of such practice in suppressing competition and tending towards monopoly among its customers was not to be considered. In other words, they took the private point of view of net income in 1897 but took the social point of view of gross income in 1901. This private point of view led to the result that one who was discriminated against by being compelled to pay relatively high prices had no remedy at common law unless he could show that the said high prices were extortionate or unreasonable in themselves, and not with reference to the question whether they were relatively high as compared with prices paid by a competitor. And this was so, even though some of the courts had declared that the system of low prices to favored competitors had an inevitable tendency to suppress competition and to concentrate the industry of the

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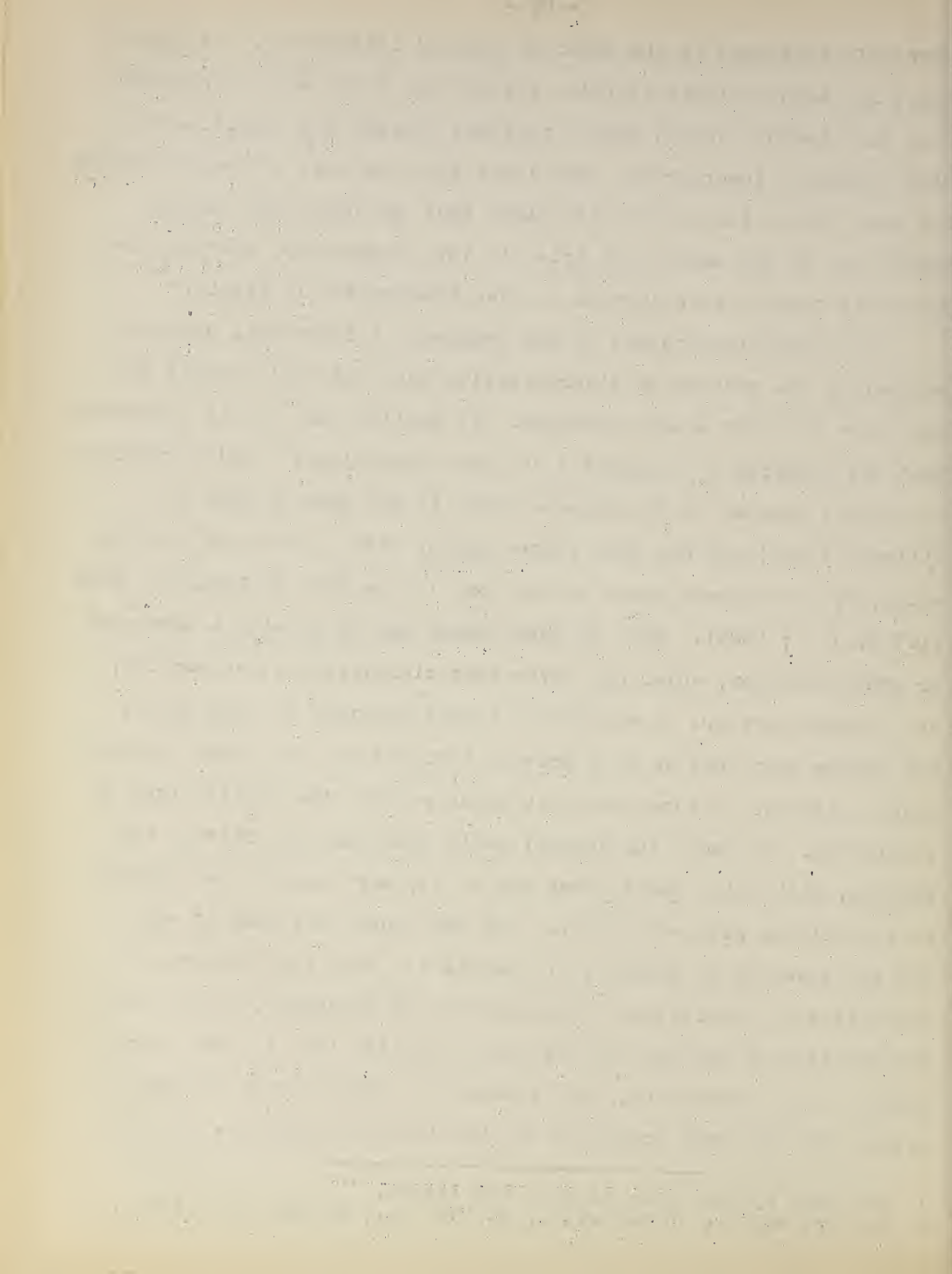
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carrier's customers in the hands of favored individuals.¹ A federal court had even declared as late as 1889 that there was no injustice done to a lumber company when a railroad charged the competitors of that company a lower price, even lower than the cost of transportation and even though this partiality might shut the plaintiff company wholly out of the market and drive it into bankruptcy, provided the plaintiff company were charged a price "reasonable in itself."²

The foregoing account of the progress of individual opinion respecting the meaning of discrimination does not apply solely to what were known as common carriers. It applies also to all industries that may properly be designated "common occupations." This principle was partly adopted by the Supreme Court in the case of *Munn v. Illinois* (1876) and was well stated again, with a review of all the cases, by the Supreme Court of New York in the case of *People v. Budd* (117 N. Y. 1; 1889). Each of these cases had to do with a warehouse or grain elevator, which had never been classified, at common law, as a common carrier. A warehouse, it was admitted in both cases, had always been held to be a private business and had never operated under a license or legal monopoly which carried the public right of regulation. In fact, the several grain warehouses in Chicago and Buffalo, with which these cases had to do, were held to be actively in competition with each other. And the court held that it was not the question of monopoly or competition that was decisive, in the matter of prohibiting discriminating or extortion, but it was the question of whether the shippers of grain, that is, the customers of the warehouses, were placed at a disadvantage by the prices and the trade practices of the elevator companies.

1 See *Hays v. Penn Co.*, 12 Fed. 309 (1882).

2 *De Bary Baya v. Jacksonville, et. RR. Co.*, 40 Fed. 392 (1889).



It was ably contended, in the dissenting opinions in these two cases, that the public had no independent legal right to make use of the elevators, since they were not common carriers subject to the duty to render service to anyone who might come along. Yet the court held that there was an element of this kind of "publicity" in the elevator business, owing, partly to the nature and extent of the business, partly to their relation to the commerce of the state and country, and partly to the fact that even though they were competitors, yet, under the circumstances, they enjoyed special facilities¹ for reaching understandings as to prices.

Thus the incoming of the distinction between discrimination and extortion arises with the incoming of the period of stabilization of bargaining power. Discrimination is not an evil during a period of abundance because every person has an available alternative. It has become the serious problem in a period of stabilization through concerted movements and live-and-let-live policies, since stabilization means the absence of alternatives, and this, in turn, means stability of discriminations and extortions as much as the stability of fair and reasonable transactions.

The most significant fact of the period of stabilization is Futurity. Modern business is conducted on borrowed capital in large amounts. Competitors are debtors. They must maintain the future solvency of their going business by keeping up their trade connections with material men, working men and customers, all of which is properly summarized in the term "good-will". Good-will, though an intangible asset, is the most important asset of modern business. Competition which breaks into it is "predatory" competition. Hence

¹ People v. Budd. 117 N. Y. 22, 24 (1889).

the "live-and-let-live" policies, which look upon future security of the going concern as all-important, are bringing in the Custom of Stabilization. And this concept of "good-will" is the outcome of the principle of scarcity, for its assumption is that opportunities are limited, because the purchasing power of customers is limited. Therefore each competitor should be willing to take only his proper share of that purchasing power. If he tries to take more than "his share," then the others, if concerted action has gone far enough, have means of putting him "out of business."

Since this sharing of the limited purchasing power of the public means opprobrium of the "price cutter" and the "scab," it is evident that the new custom of stabilization is far removed from the early economists' reliance on the mechanism of free competition and has gone back to the rules and regulations of the period of scarcity and the fair competition against which Adam Smith raised his philosophy of liberty and abundance. It becomes now the social problem of Reasonable Value, the problem, begun by Ricardo, as to whether individuals and groups, by concerted action, shall obtain from society a share of the social output proportionate to, or disproportionate to, the services they render towards augmenting that output. In other words, it is the problem of equality of bargaining power, with its distinction of earned and unearned income instead of Smith's problem of liberty and abundance.

IX. Rationing

X. Jurisdiction

XI. Social Responsibility

Chapter XIV. From Locke to Going Concerns.

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